Read Stove Selling Pointers on pages 33 to 38 in this issue.

AMERICAN ARTISAN and Hardware Record

VOL. 86. No. 9. 620 SOUTH MICHIGAN AVENUE, CHICAGO, SEPTEMBER 1, 1923. $2.00 Per Year.

Answering the Question of

Even Heat Distribution

HEAT distributed evenly to every nook and corner of the home is obviously desirable. The attainment of this result, together with perfect ventilation and a uniform temperature day and night, is just one of the many benefits realized with the FARQUAR HEATING and VENTILATING SYSTEM.

Some idea of the meaning of the above can be gained from reading the following unsolicited letter:

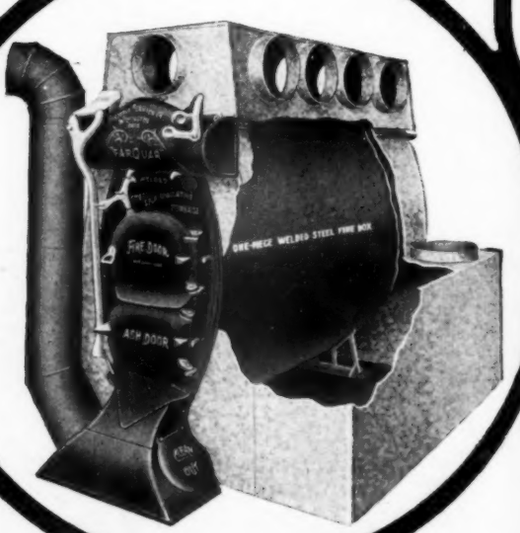
> "The FarQuar Heating and Ventilating System has kept my house (7 rooms and bath) at a temperature of 70 to 75 degrees this winter. The self regulator has maintained an even temperature and the vent and return system has kept the air pure and sweet at all times,—no smoke, dust, or gases, but just like fresh summer air.
>
> "It regulates itself, requires firing only once every 24 hours, and is most economical in fuel consumption for I have only used five tons of soft coal to date (March 20, 1923).
>
> *(C. D. GLOVES, Missouri)*

There are many reasons for the distinctive results achieved only by the FarQuar. What they are and what they mean are fully explained in an interesting booklet which will be sent free to Architects, Contractors, Builders and Home Owners on request.

The Farquhar Furnace Co.
209 FarQuar Building
Wilmington, Ohio

The FarQuar accomplishes results impossible with any other heating system.

THE FARQUAR SANITARY HEATING AND VENTILATING SYSTEM



Here's an Opportunity for Someone!

We can use the services of a few more men who can qualify as distributors. This is an unusual opportunity for the right man. If you are interested and are financially responsible, or if you happen to know of a good man whom you think might be interested, write us for full particulars.

Founded 1880 by Daniel Stern

Thoroughly Covers the Hardware, Stove, Sheet Metal, and Warm Air Heating and Ventilating Interests

AMERICAN ARTISAN and Hardware Record

Address all communications and remittances to AMERICAN ARTISAN AND HARDWARE RECORD 620 South Michigan Avenue CHICAGO, ILLINOIS

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KITCHEN RANGES AND PLAYER PIANOS

At a recent meeting of retail hardware merchants from almost every section of the United States, one of the speakers made this statement:

"I submit to you that it is easier today to sell the average American family an automobile or a player piano than it is a kitchen range. They have more money for gas and pleasure and less for hardware. They buy paint for the face but not for the house. Modern times have developed expensive habits that people gratify in spite of the lack of essential items."

There is no question as to the facts of the case—so far as appearances go.

Undoubtedly there are more phonographs and player pianos sold than kitchen ranges during a year of fairly prosperous conditions, such as this year of 1923.

Undoubtedly there will be more Fords and automobiles sold in 1923 than the total number of kitchen ranges disposed of through all channels.

However, it does no good simply to call attention to these facts.

The only thing that will tend to change this condition is a full and frank recognition of the underlying fact, the result of which is this unsatisfactory condition.

The writer made a summary of the advertising space used by various manufacturers and retailers in several lines in the Chicago Sunday Tribune of August 26th.

Several pages were given over to musical instruments, while less than three columns were devoted to ranges and other cooking apparatus.

Is it any wonder that people think more about ukeleles, banjos, pianos, phonographs, saxophones than about kitchen ranges?

Automobile and kindred advertising occupied 9 columns of 21½ inches each in the Tuesday issue of the Chicago Tribune, with not one inch of advertising pertaining to the sale of kitchen ranges.

Is it any wonder that many people think very little of spending a thousand dollars for an automobile which at best is not likely to last more than five years, as compared with the hundred or hundred and fifty dollars they will have to spend for a kitchen range that will last them at least twenty-five years with reasonable care?

Whose fault is it?

Is any one to blame for this condition except the men who are engaged in the business—making and selling kitchen ranges—as a class?

There are, of course, some stove manufacturers and some stove merchants who really believe in advertising and whose belief has borne fruit in large and successful businesses, but compared with the great number who refuse to see the lessons that are plain enough for those who are willing to learn from experiences of others, their number is of practically no importance.

The consuming public will continue to spend its money for the things that are brought forcefully to its attention in a favorable light, and until stove merchants and stove manufacturers make up their minds that stoves and ranges can be advertised to the same good effect as is the case with phonographs, cosmetics, automobiles, cigars, candy, wrapping paper, syrup, chewing gum, and other staples and luxuries, there will be no difference in the public attitude.

Nor will there be any considerable change for the better in the stove field.

Random Notes and Sketches.

By Sidney Arnold

In order that some of these so-called expert fishermen who send in stories about their wonderful catches may know that the staff is not entirely without success in that line I am showing herewith a pic-

Jim Terrill and the Muskie He Caught.

ture of a "muskie" caught by Jim Terrill of the composing room in our printshop. Jim is a six-footer, so you can judge for yourself as to the actual size and weight of the catch. It was caught in one of the lakes near Tomahawk, Wisconsin.

* * *

I received a note the other day which made me remember that I am getting along in years, too. It told about the retirement from active sales work of two of my old friends, Sam P. Keller and Harry P. Resch, both of the United Alloy Steel Alloy Corporation.

For many years it has been my pleasure to meet and visit with these two fine men at hardware and sheet metal conventions in Ohio, Michigan and Indiana, but now I suppose that these pleasurable visit will be no more.

Brother Nicholson tells me, however, that two good men will take their places—Art G. Schreiner in the Detroit territory and J. W. Wirth in Northeastern Ohio and Northwestern Indiana with Lima, Ohio, as his headquarters.

To both I extend, on behalf of the fraternity, a hearty greeting and best wishes for success. They are both old-timers with the Corporation, having been promoted to their present positions because of good service.

* * *

An impressionistic artist friend of mine came to Chicago the other day and while I was looking through our "morgue" for a half-tone picture of one of our celebrities, he stood at my side with a black crayon and a cardboard making rapid sketches from some of the pictures that were in the file.

I will admit without any argument that the "likenesses" that my artist friend drew are of a somewhat liberal nature, but just see if you don't recognize some of them especially when you take into consideration the fact that the hirsute "adornments" are not to be regarded as "accurate."

Take for example the smiling gentleman with the flowing curls and the cigar. Isn't that a pretty good picture of George Thessmacher?

And vis-a-vis with the pipe?

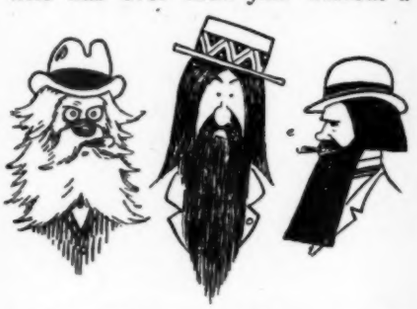
Dave Haines, of course.

Looking at the smiling gentleman to the left in the next picture, wouldn't you think that Harry Van Bayse had a luxuriant growth on top of his head, but sad to say, the artist was mean enough to anticipate what Harry has been fearing for years, as shown in the right half.

The Indian coiffure is supposed to belong to Jule Gerock, even though the original does not possess the toothbrush effect on his upper lip.

His companion to the right is a rather "pulled out" likeness of Dave Farquhar.

It is really surprising what a few strokes of a pencil will do. That lugubriously looking face is really the property of Jim Doherty, but who has ever seen Jim without a



smile? The Santa Claus with the cocky fedora would be found to be George Carr if the whiskers were removed, and the square trim with the "Kelly" hides the genial features of Ellsworth Dunning.

* * *

Just think hard of what Douglas Malloch says in the following—and then make that your purpose:

The Things Worth Doing.

To make our goods a little better,
To write a little neater letter,
To drive a nail a little straighter,
To make our worth a little greater,
To do whatever is our duty
And give it strength and give it beauty—
To be to men more nearly brothers,
To be a bit more help to others,
To speak to men a little kinder,
To little faults a little blinder,
To fill our place, if high or lowly,
With something that will make it holy—
To make the load a little lighter,
The world around a little brighter,
To make the way a little clearer,
And heaven bring a little nearer—
These are the matters worth the doing.
To win a fortune is not vital,
To wear a crown, to wear a title;
To have men hate us, children fear us,
Will never bring our neighbors near us—
No, we shall make life worth the living
Not by our getting but our giving!

Millis Lays Foundation for Answering Question, What Is Heat? Where Is Its Source and How Does It Travel?

Says Every Dark, Damp, Dirty Basement Is a Laboratory Offering Opportunity to Serve Mankind as Truly as the Surgeon.

WHAT is heat? Sounds like an easy question to answer; nevertheless, a moment's cogitation upon the subject will prove to you that it is not so easy as it at first appears. In this article L. W. Millis has attempted to lay the foundation for a thorough study of the subject and to bring out if possible how these facts can be used by the furnace installer in the basement.

It is the business of the furnace installer to provide proper arrangements for the transmission of heat from one place to another. Likewise, it is part of his job to prevent heat, as far as he is able, from going where it is not wanted.

The thoroughness with which he accomplishes this will indicate the safety and efficiency of his completed heating plant.

It would seem that the more a person knows about heat that the better his chances are of successfully handling it.

Due to the interest you have shown in theory, as well as practice, I think it wise to go a little farther back in this than the former subjects, because it is one of the most vital subjects the heating man meets.

Many people think of heat and cold as two independent things battling against each other. In fact, up to about 125 years ago that was one of the scientific explanations of the antics of heat, or as they said, of heat and cold. But we know, now, that heat is not a thing. It has no weight and it occupies no space.

Professor Tyndall defined heat as "A mode of motion."

That reminds me of the man who was passing through a sleepy village. He asked a young fellow where a certain road led to. The youth could not tell, and seemed very much embarrassed at not knowing. The man passed on and stopped at the next town for some sort of refreshments. In a short time the youth came running up all out of breath and said: "Say, Mister, I asked my brother and he don't know where the road goes to either."

If Professor Tyndall's brother scientists know any more about heat than he does, I wish they would tell us.

If you will be patient and extremely attentive, I will try to tell you what I think Professor Tyndall wanted us to understand.

What Is Heat?

Professor Tyndall defines heat as "A Mode of Motion." Mr. Millis lays the foundation for a scientific study of heat and its relation to molecules, atoms and electrons, depending upon who is speaking. He shows how heat is derived from the molecular motion or the bombardment of molecules and that when there is no molecular motion, there is no heat.

In the next article, Mr. Millis has promised to help us to get a working idea of how the energy we call heat gets to us from the sun; how it is stored in coal, wood and other things, and finally, what part the furnace man can play in its economical delivery to the place where we can use it for our convenience.

Matter, that is everything in the universe, is composed of small portions called molecules, atoms, or electrons. It depends on who is speaking.

A molecule is so small, it is claimed, that if a drop of water should be magnified to the present size of the earth, then the molecules in the drop would, according to some estimators, be about as large as a baseball and, according to others, only about as large as small shot. In other words, they are inconceivably small.

These little chunks of matter, or molecules, are forever and always in motion, bumping against each other, many millions of times every second. It is worth our while to remember that the temperature of a thing depends on the number of molecular vibrations per second. If the rate is increased the temperature will rise. If the number is decreased the temperature will fall.

In solids the molecules move back and forth, like tiny pendulums. In liquids they ramble around back and forth without apparent regularity. In gases they tend to move in straight lines. But, no matter how they move the temperature and the vibration or molecular bombardment are proportional to each other. The greater the rate of bombardment the greater the swing of the chunks of matter; *the more space it occupies* and also the greater its temperature.

I must remind you of that tiresome absolute zero stuff we had seval weeks ago. If the rate of bombardment in a cubic foot of gas at zero be lowered so that its temperature falls one degree, it will shrink 1/460 of its volume. Manifestly it could only shrink 460 times. We assume that the motion of those busy bombarding molecules would have gradually died down until at 459 degrees below our zero (or at absolute zero), they would be at rest. No motion, no heat. A state of coma. As a matter of fact, the Bureau of Standards of our Government has recently compressed (and cooled) hydrogen and helium to a liquid state and thereby come within speaking distance of absolute zero. I think that is within about 15 degrees. So far as I am concerned they need not go any lower.

Professor Tyndall said: "Heat is a mode of motion." I guess we might as well agree with him. We find—no motion, no heat; absolute zero; some motion some heat; much motion, much heat. That is to say, they absolutely depend on each other.

We may not know what motion really is, nor what heat really is; but if we get Tyndall's idea of heat

being a mode of motion, we will find it as handy as asbestos paper on a furnace job.

A block of wood is hard. A brick may be still harder. We do not think of the brick as having more hardness mixed in it as an ingredient. That brick may be cold today and hot tomorrow, but there is nothing to lead us to believe that a thing called heat has overpowered a thing called cold and taken possession of the brick.

Question by Mr. Hartnett: "You have got me all balled up. When is a thing hot and when is it cold?"

Answer: "Your question is a live one. I expect you think of the temperature of things relatively. Your coffee is cold, warm or hot, all within a range of a few degrees as indicated by sensations of heat in your mouth. A piece of carbon might be described as cold at 200 degrees and hot at 5,000 degrees, if it is being used in electrical work.

The daily use of the terms cold and hot are all relative. The true way to think of cold is to think of the absence of heat.

If there is really such a thing as absolute zero and if something should be cooled to that degree then it would be the only really cold thing. Just as soon as one degree of heat is imparted the thing would rise from 459 degrees below zero to 458 below and would be warmer and so on up the entire range through 459 degrees, getting hotter and hotter, until it reached what we call zero. It would then be so *hot*, that if you held it in your hand a while, it might freeze the skin of your hand. Of course, you would say that it was so *cold* that it froze your skin, but the fact is that heat would be "flowing" from you to the colder thing and its temperature would continue to rise toward the temperature of your body.

Now don't call me down for using the word "flowing," after telling you there is nothing to flow. We won't try to change the use of words in connection with heat and cold, but I am trying to change my way of thinking of them. I hope all of you will join me in that effort.

Question by Mr. Yardy: "If the question 'What is Heat?' can't be answered any better, would it be all right to ask 'Why is Heat?'"

Answer: Yes. It is a good question. But you would probably have to find out why molecular bombardment exists. I suspect it would lead us to study—an absolutely orderly universe—and finally bring us face to face with the problem every serious student finally meets; namely, Power, Intelligence, Creator, God. Yes, it's a fair question. All I can say is what the country boy said: "I asked my brother and he does not know either."

Question by Mr. Morris: "If you can't tell us what heat is, or why heat is, can you tell us where it comes from?"

Answer: "Yes. Provided you will let me choose a starting place. All heat, at least all heat as we know it, comes from the sun. I had intended to show you tonight how heat travels and to show you the three ways; namely, conduction, radiation and convection, and what the furnace man can do about it.

The interest you have shown tonight causes me to think I had better destroy my prepared paper and lay a little better foundation before we carry our problem to a basement.

Next meeting we will try to get a working idea of how the energy we call heat gets to us from the sun. How it is stored in coal, wood and other things and finally what part the furnace man can play in its economical delivery to the place people want to use it.

I am delighted at the interest shown tonight.

Every dark, damp, dirty basement is a laboratory, offering opportunity to serve mankind just as truly as the surgeon, or lawyer, or minister. If the rewards have not been as great for the service rendered, it is because our service has been more bungling than theirs. Let us put as much skill behind the snips and paste brush as the surgeon puts behind the knife.

And now I want to introduce to you Mrs. White, Mrs. Cole, Mrs. Clark and Mrs. Millis. They are earnest students of this problem of heat and cold, and will put on a practical demonstration, using several gallons of lemonade 'n everything.

Useful Information on Furnace Pipe and Fittings in New F. Meyer & Brother Company Catalog.

We never stand still. We either progress or retrograde. The man or firm who does not progress soon finds himself or itself a back number relegated to the scrap heap. Progressive firms are constantly changing and improving their methods and products.

F. Meyer & Brother Company, Peoria, Illinois, has issued its new catalogue, No. 43, dealing with Handy Furnace Pipe and Fittings. The catalogue consists of eighty-four pages, exclusive of the covers, and is printed on a good quality of paper. The front cover is lettered in dark blue, while covers themselves are of a yellowish tint. Each successive page is surrounded with a sky-blue border, while the illustrations throughout the book are carefully selected and well arranged, so as to make the products as nearly life-like as possible.

Furnace pipe and fittings are the subjects chiefly dealt with in the catalogue.

The company announces that it is not distributing this catalogue broadcast, but is only mailing it by special request.

Sees Great Improvement in AMERICAN ARTISAN.

To the Editor:

American Artisan is all right. Your magazine has improved wonderfully during the past year, and so has our business.

Sold thirteen furnaces yesterday, and this makes sixty-three we have sold to be installed this year.

G. O. Crouch & Son.

Chattanooga, Tennessee,
August 28, 1923.

A polite man is a great missionary; I never meet a polite man that I do not resolve to be more like him.

Turton "Hops" on Menk, Criticising the Latter's Solution to the Pipeless Furnace Installation.

Produces Sketch of 13-Room House Used as Office Being Successfully Heated by Pipeless System.

FROM time to time during the last year we have published discussions carried on by pipeless furnace specialists.

The following letter is from George W. Turton, Niles, Michigan, in answer to the article by R. W. Menk, published in our June 30 issue:

In your June 30 issue R. W. Menk submits in detail his plan for solving my pipeless problem and also asks for a sketch of a 10 or 12-room house heated by a pipeless furnace.

I believe a little further analysis of Mr. Menk's proposed installation would further enlighten interested readers.

He says the plan I proposed is an ideal one for a pipeless system. If so, the last six months' efforts is a reflection on the pipeless ability of our able heating men, for only one, as previously stated, solved it correctly.

He further says several methods of installation would successfully apply to this house, but prefers the pedestal plan as illustrated, under partition at foot of stairway. I think the former analysis will show why this location would overheat the living room and slight the kitchen, also that the grille proposed could not deliver an 85 degree temperature in the bath from 65 degrees air in the hall. Simply impossible.

Do not use smaller than a 12 x 30 grille if space permits; and always place it as near to the ceiling as possible and directly above the door—not as illustrated in Figure 2, page 36 of June 30 issue. Keep an open eye to the most pleasing effect along with efficiency—it spells satisfaction.

If you locate a floor grating in or near a corner as suggested, you would make an unpardonable error—cold air does not circle corners in seeking a way out. And if you placed a grille in the partition, expecting to heat the upstairs by that avenue, it would be a positive failure. The spindle railing at A and B would permit a cold-air blanket which no grille capacity could overcome.

Using Mr. Menk's preference, the pedestal, with half of warm air delivery into stairway, are we not wasting costly fuel many times when heat is neither necessary nor desired upstairs?

And now note construction of pedestal register. Regardless of any claims made, it is the unbiased tests that determine efficiency. Kindly note Figure 3, page 36, June 30th issue. The base ring on this register appears to extend upward from the floor line about one and one-half inches. The artist indicates the cold air making a pole vault over this base ring to get down into the heater. Did any heating man ever see the heaviest air in the room, with all the pressure above it, performing a stunt of that kind? Not much!

On the contrary, that one and one-half inches of cold air stays right there on the floor. The layer on the level with the lowest holes in the register moves over it and into the heater. So we have one and one-half inches of cold air as a permanent foot tonic.

It is also a well known fact the most efficient cold air travel is nearest the floor line, hence the top half of cold air register is largely pretense.

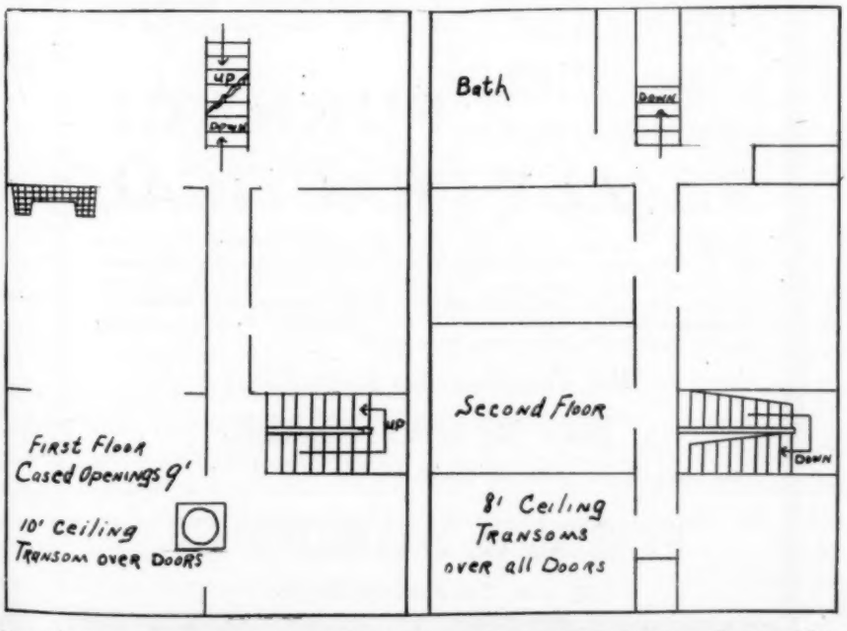
Hence a reasonable conclusion must be that the floor grating type installed as suggested in a former issue is both the most economical and efficient.

Mr. Menk asked for sketch of a 10 to 12-room house in which a "so called pipeless" is producing an "absolute uniform temperature." If any man tells you he can do that with ANY circulating air system, tell him his imagination valve is under dangerous pressure.

Numerous tests have shown that the temperature varies as much as 2 degrees in the same room, hence a variance of 2 degrees to 4 degrees in the several rooms is to be expected and is no detriment, nor will it be noticed without a thermometer.

You will find at outside wall a temperature at least one degree higher than the center of the same room, with the pipeless system.

I am going one better than requested by submitting a sketch of a 13-room house used as offices. Variance here was 4 degrees. The



Sketch Shows 13-Room House Used as an Office. The Pipeless System Was Used Successfully Here, the Temperature Variance Being Only 4 Degrees.

bath was always the warmest room on the second floor, the reasons being, the long hall with warmest place at the end, heat being absorbed by the bath as it was retarded in its circulation.

And this is not the limit of successful pipeless performance. I know of a 2-story 27-room house and 3-story 30-room house, both successfully heated by twin pipeless systems. However, a 3-story house is not a problem for a novice to tackle.

And what do you say to heating one room of a 9-room house with an 8-inch pipe from the "so-called" pipeless, run a distance of thirty feet with a ½-inch elevation to the foot, maintaining a temperature of 1½ degrees lower than the room in which the grating was located?

Yes, it was done. All these citations are not mere theory, but history, and many more hidden mysteries can be solved by anyone willing to proceed on the theory that he has not yet arrived.

GEORGE W. TURTON.

Niles, Michigan.

Combines Factory Specialist's Knowledge with Reliability of Firm in 15-Day Furnace Special.

Do you stop to realize that about all that the outside world knows about your business and what you have to sell is what they learn from you yourself, your clerks and your advertising, chiefly the latter? Neither is the public *interested* in what you have to sell until you prove to that public that you have something which will add convenience and comfort or lessen labor in some material way.

Think, then, when you are writing your advertising copy that you want to tell a disinterested group of people that you have something of utility value to that group. Until you bear that one point in mind at this vital time you are going to do a lot of experimenting which will prove discouraging and costly.

Selling effort is required where a business is to flourish. The accompanying reprint from the Easton, Pennsylvania, *Express* is an excellent method of education. Feinberg & Silverstein Company realize that whatever they put in their advertising copy must eventually stand the acid test and give reason why it has a right to exist. But instead of merely waiting for the test to be made after the heating system has been installed, to perform their demonstration, they took time by the forelock, brought a representative

from the factory to demonstrate the pipeless furnace, advertised the fact and made a special offering at a time business in this line is at a low ebb, creating business for the company and also extending their operations.

Note the headline. This is an excellent example of the direct command in advertising. The illustration is very good and the arguments contained in the body of the ad are designed especially to arouse interest in the pipeless furnace. The necessity of a quick decision on the part of the buyer to receive the discount is also in good form and in accordance with the practice in good copy.

It will be noted that everything is down in black and white in this ad—discounts and all—with no room for doubt. Note also how the firm has connected the superior knowledge of the demonstrator with the reliability of the firm.

Many Improvements Have Been Made in Wales Furnace Fan.

When the Wales Furnace Fan first came to the writer's attention it was a rather complicated affair, and doubt was expressed as to its being accepted by any large number of furnace installers. One of the points against it was the fact that it was then necessary to drill holes in the firepot of the furnace in order to place the heating element or steam generator where the fire would have the greatest effect.

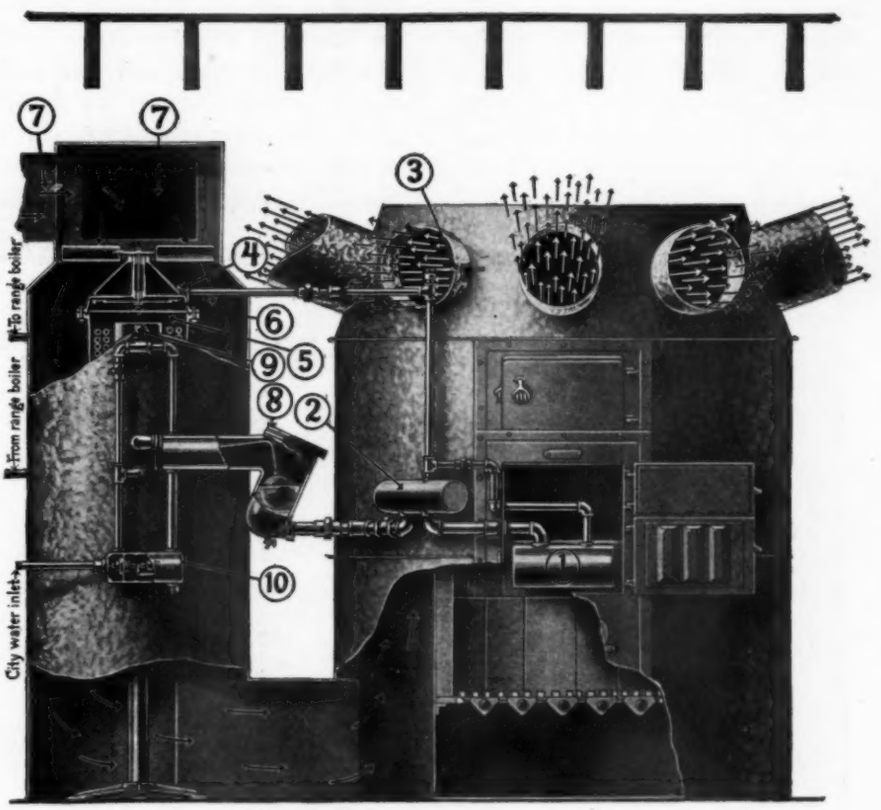
But this and several other minor defects have now been overcome, so that today the Wales Furnace Fan is a very much simpler apparatus and at the same time much more efficient—both as a dependable distributor of heat and also as a positive humidifier. In addition, a plentiful supply of hot water for domestic purposes in kitchen and bathroom is also obtained.

The accompanying illustration shows a skeleton view of a Wales Furnace Fan installation.

The various parts are shown by the numbers on the accompanying illustration as follows:

Number 1 is the steam generator, 2 is the steam drum, 3 is the safety valve, 4 is the turbine nozzle, 5 is the condenser case, 6 is the turbine, 7 is the cold air inlet, 8 is the automatic water control, 9 is the humidity outlet, 10 is the automatic water control valve.

The fan operates by a minute flow of steam generated in the heating element which is attached to the inside of the firepot of the furnace and marked on the illustration as 1. This heating element is automatically supplied with water by a hydrostatic balance in accordance with the varying intensity of the fire, so that with a very few pounds of steam the fan is kept running at an even speed. After the steam has been expanded in the turbine, it condenses within the turbine and is automatically returned to the heating element as water to again repeat the cycle.



Skeleton View of a Wales Furnace Fan Installation.

A coil inside the condenser case is heated by the exhaust steam, and is used to supply water for domestic purposes.

The Furnace Fan Corporation, which is located in Dowagiac, Michigan, has now arrived at the point of producing this equipment and will be glad to supply full particulars to anyone sending request to the manufacturers.

Wasteful Competition Can Be Stopped Only by Coöperation.

Truly, we are in the midst of evolution. The days of unthinking, unscientific, wasteful competition are passing fast. This does not mean the passing of individuality, but rather individuality's real growth. The coöperation of individual thought and action, so that individuality may gain its best advantage. Unthinking, unscientific, wasteful competition—that is, after all is said and done, our real problem.

New Discount Sheet Issued by W. E. Lamneck Company.

The W. E. Lamneck Company, Columbus, Ohio, has issued Discount Sheet No. 18, which carries changes in the discounts applying to the company catalogues No. 2 and 3, the changes are effective August 20, 1923.

Oval Cooking Utensils and Small Babies' Bath Tubs Are in Constant Demand in Rural Communities.

Tinners Are Often Called Upon to Make These, and the Drawing Shows How This Can Be Quickly Done.

Written Especially for AMERICAN ARTISAN AND HARDWARE RECORD by O. W. Kothe, Principal, St. Louis Technical Institute, St. Louis, Missouri.

IN RURAL districts the tinner often has to make small bath tubs for babies, as the one shown in this drawing. The same method can also be applied for making oval cooking utensils, used for steam cookers in hotels and restaurants and free lunch counters. The first thing is to describe the plan of oval, and this oval may be described in any one of a dozen different ways; so long as a uniform curvature is produced, it is satisfactory.

Our method of describing an oval is as follows: Let A-B be the major axis for the outside edge and C-D be the minor axis for the outer edge. If desired, this can also be made the inner edge, as the method will work out the same as we are doing here with E-G and H-F. Then take the full minor diameter H-F and set off, as E-m on the major axis. The remaining distance left as m-G divide in three equal parts, m-n-o. Take two of these parts and set to center X and mark point I on each side. This will be the center for describing the end arcs of oval. Now by taking the space between I-I, or four such spaces as m-o, we set at X and mark points J-J above and below the center. These will be the centers for describing the side arcs of oval. By drawing the divisional lines J-I, we can see where the end arcs finish and the side arcs begin, where the point of tangency is made. Now set the dividers with I as center and G as radius, describe the end arcs. Next shift the dividers and with J as center and F as radius, strike the side arcs. By reversing, the entire oval can be described for the bottom. By using the same centers, the oval for the top edge of tub can also be described, as shown by A-C-D-B. Now our elevation is mainly to show us the altitude it is to have, so we take this altitude as M-N in the

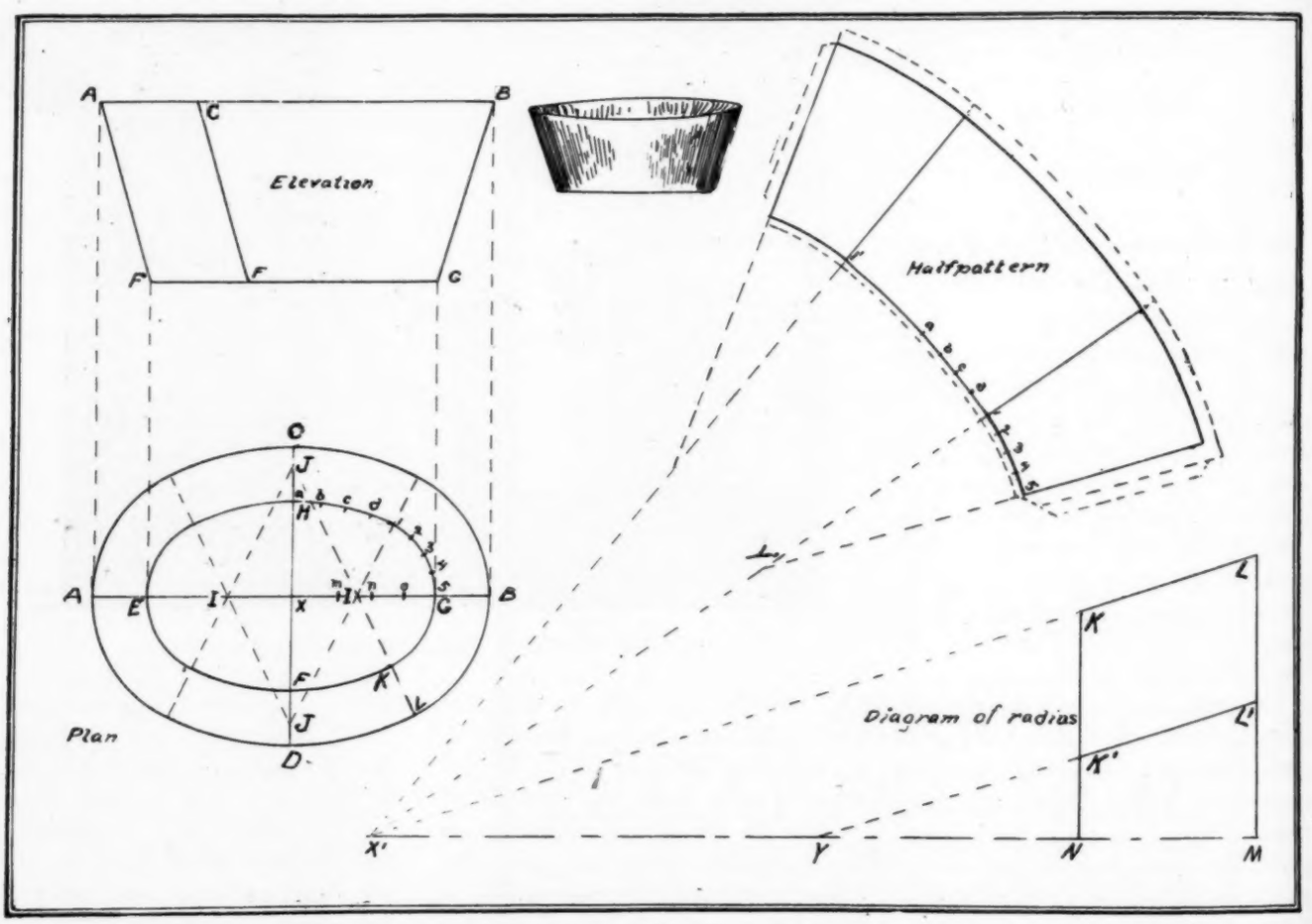


Illustration Shows Pattern Used for Making Small Oval Bath Tubs and Even Oval Steam Cookers and Other Cooking Utensils

diagram of radii. Square up lines as M-L and N-K. With dividers pick the radius lines from plan as J-L and set as M-L. Next pick J-K from plan and set as N-K. Draw line from L to K and extend lit until it meets the base line in apex X′. Next pick the radius line from plan I-L and set as M-L′, then pick I-K from plan and set as N-K′. Join K′ and L′ with a line extending it until it intersects the base line in point Y. Then these two lines are used as the radii for describing the pattern. For the pattern set to X′ as center and K as radius and describe an arc as 1-1′. On this arc measure off the circumference bound on this side line of plan and then draw a line to X′, as shown, extending them outward, also to cut the outer arc, which is described with a radius of X′-L. Now with dividers pick the radius K′-Y, and using 1 in pattern as center, set on line 1-X′ as Y′. Then use Y′ as center and describe the arc 1-5. Also describe the top line from this center. Transfer the girth from plan 1-5, as here shown, and draw lines to the center Y′, and you have the outlines for pattern of body. To this, edges for seaming and wiring must be allowed extra.

What the Change from Twelve to Eight-Hour Basis Means to Producers, Buyers and Users of Steel and Iron.

A Fair and Clear Exposition of Some of the Many Points That Have Had to Be Considered Before a Start Could Be Made That Would Be Reasonably Sure of Successful Issue.

"THE UNITED CLAN" has not a thing to do with the K. K. K. It is the title of a newsy and interesting eight-page publication for the employees of the United Alloy Steel Corporation, which among other lines manufactures the well-known Toncan Metal.

In the July issue there is a clear exposition of the difficulties which not only this company but every other concern in the steel making industry has had to consider and overcome, pertaining to the matter of changing the mills from the so-called twelve-hour day to the eight-hour day.

George H. Charls, vice-president and general manager of the corporation, is the author of the article, which is published herewith, in order that our subscribers may have a clear idea of what this change means to them and to the general public which uses sheet metal and other iron and steel products:

Twelve Hour Day.

Any discussion of this subject always starts with the assumption that employer and employee are not in accord—that they cannot agree on the number of hours per day for each and every job. It assumes that the company, the corporation, the management, are to blame for a twelve-hour day.

This is not true; the facts are twisted and distorted; the truth is sacrificed for the sake of argument.

The crux of the situation is found in two entirely different propositions. The first is that the employee has not been entirely satisfied with the same rate of pay per hour when he worked lesser hours, because his daily earnings have been reduced. On many jobs they have insisted upon working longer hours to earn additional pay or sought other jobs. In short, many do not want lesser hours if by working more hours they can increase their daily earnings. This has applied particularly to the lower paid men.

The second condition is that there is always a shortage of men on the jobs in times of big demand, so that it is very difficult to operate in such periods. With reduced operations, we have increased costs which are always followed by depression and irregular employment. Is not steady, continuous employment of days per year as important as hours per day? If an increase in cost is the result from either or a combination of both conditions, it would be frowned upon by the buying public. In fact, that very combination of conditions exists in some lines today, for example, lack of production and increased costs, and the public is not only frowning but is positively refusing to go ahead with enterprises that are needed, and a buyers' strike is imminent because of such increased cost.

Production Cost Must Be Kept Low in Order That Buying May Be Steady.

The employer and employee have a common cause, a single interest—that is to keep up production so that costs may be kept down and a prolonged buying movement sustained. Some hold that this is simply an argument to get more work out of the men. They may honestly think so, but they simply have not studied the problem; they have not given it deep thought; they have jumped to conclusions without a knowledge of all the facts.

When you ask the price of an article and it is plainly higher than it ought to be or has been, you do not buy it—neither does the public. If the price is right, the public does buy. This is the real reason for the fluctuations in business. The public buys when prices are normal; it stops buying as soon as prices seem unnecessarily high.

The twelve-hour day could be eliminated if means could be adopted to hold production and cost in line. This is the task confronting both employer and employee. It is not a dispute or an argument—it is a problem to be solved by serious study and careful consideration of all the facts by the employer, employee and the public.

The products of our company are works of art in the craft. Their extremely high quality is worthy of the best work any man can put forth. They are products requiring special skill in production. The public has faith in the products of this organization—the lives of hundreds of thousands—yes, millions—depend upon its quality to carry them safely in automobiles and steam locomotives. The factory products must exemplify beauty of design, coupled with strength, serviceability and reliability. The employees of this corporation must be thinking men and they should give all facts in connection with a twelve-hour day the same thought they give their daily task, just as the management is studying it and looking for a solution.

Shorter Hours Rule for Many Years in Several Departments.

The eight and ten-hour day has been effective in the sheet rolling department for years, where remuneration per man varies with the tonnage produced and where operations are continuous and uninterrupted. However, during the last three months only 75 per cent of the mills have been in operation, due to a lack of men, and costs advanced tremendously. Many good rollers, heaters, roughers, have been out of work or have taken lesser jobs because they could not get men to fill up their crews. If, during this same period, the eight or ten-hour day had been effective in all divisions, the same or a lesser percentage of operations would have applied, which would have meant decreased operations in all departments, with its attendant increase in cost, which the public would have had to pay.

The question arises, could the same number of men produce the same amount of material working a lesser number of hours? Possibly they could in some departments, but in other departments this would be a physical impossibility, and other means would be necessary to maintain uniform production and costs to meet the market conditions.

Some suggest that the extra cost be added to the selling price and passed on to the public. It would be easy to quote the public the increased price but it would be just as easy for the public to refuse to buy, and no one plant could afford to take the chance. It would have to be a general movement. No.

the only practical way out is in some manner to increase production per man, keep costs down and thereby insure steady employment.

This very frank discussion of the subject is for the purpose of proving that it is not an arbitrary stand on the part of the management that governs, but on the other hand, it is decidedly a proposition which many factors control. It can be solved only by the serious consideration and joint action of management and men, and plans outlined which will first provide more men to operate the plant or so increase production per man that the plant can be operated with the same number of men; also to so apply tonnage, piece or task rates that the cost will be kept in line, to satisfy the buying public.

No doubt this will call for sacrifice on the part of the public, the employer and employee when the problem is solved. It can only be accomplished successfully by a true understanding of all the facts and hearty co-operation on the part of all concerned. That it is a tremendous task which may or may not be successfully accomplished and that it will require a long time to completely and satisfactorily solve all the difficulties is surely obvious to all who give the problem the study it requires.

Here Are a Dozen Definite Pointers That Will Help to Make Your Sheet Metal Shop Pay Better.

Lauriston Makes Notes from Information Given to Him by Man Who Knows What He Is Talking About.

A MAN who knows whereof he speaks has said that what most people need most is to take the advice of the great Scotch poet and to see themselves as others see them.

So here is the way that Victor Lauriston sees the average sheet metal shop and the average sheet metal worker, for when he talks about these two subjects, as he recently did in the *Michigan Tradesman,* he has the average in mind, and not the occasional shop or worker.

Mr. Lauriston's article follows, and it is well worth more than a cursory glance:

How to Prevent Waste and Carelessness in the Tinshop.

For some hardware businesses, the tinshop is a great asset. In other hardware stores its value is regarded as dubious. The difference simmers down quite often to the question of management, with an eye particularly to the prevention of waste.

The answer to the question, "Why doesn't the tinshop pay?" which has been asked and not satisfactorily answered so many times, is, in the opinion of many experienced dealers, to be found and summed up in that one word, "waste."

The question is by no means a simple one. It has many ramifications; for there are many directions in which, in the management and operation of a tinshop, waste may occur. But I have here set down, in the words of an experienced hardware dealer in a city of some 15,000 people, his personal views as to the main factors that contribute to waste, and consequent unprofitable operation of the tinshop.

Eliminating Waste of Unfinished Materials.

"The first waste," he told me, "is in material, or, in other words, raw stock. At the present time, when there are so many uses to which sheet metals are put, it pays to keep almost every scrap of galvanized iron, tin or black iron.

"It is no uncommon thing to find pieces of scrap, which could be handily used for repair work, such as bottoms for pails, lanterns or covers, etc., thrown into the dump box. Some workmen think that anything like this has to be cut out of the whole sheet. All this scrap could be put away until slack times during the winter months, and then cut up by the apprentice into step-flashing, outlets, end-pieces, ferrules, etc.

"Another good use for scrap galvanized iron, or, in fact, for iron that has been used, is to cut it up into roof patches, about 3x7 inches. Tie these in, say 10-pound bundles. Your carpenter customers will be glad to buy them at a moderate price to do repair work on shingle roofs.

"There are several other things in the way of material to which it would pay to give consideration, such as saving all pieces of scrap brass, copper, zinc, lead, etc., whether old or new. This stuff can be sold to the metal man. It pays. With solder at present prices, it will pay any boss to keep an eye on the waste in that direction. In any shop where a number of men and boys are employed the waste in solder, if not watched, is apt to become very considerable.

"In shops where gas or gasoline is used for heating solder, iron, etc., it is no difficult matter, by careful oversight, to save at least 25 per cent of this expense. This is also true where charcoal is used.

"Now, these are only some of the avenues for waste in materials. I could enumerate others.

Non-Producing Hours Eat Into Profits.

"The waste in time, however, is even more serious in a great many shops. To me, this is the sore spot of the whole waste body. There are tinners who never seem to stop to think that one non-producing hour out of ten means that the shop makes practically nothing out of that man's time, after making due allowance for the cost of doing business.

"This is not so noticeable in the small shop where there are only one or two employes as where there are a larger number. But if one expects to make anything out of the tinshop, the matter of time must be watched very closely.

"I know of no better way of doing this than by a proper system of keeping track of every five minutes of the day and seeing that it is properly accounted for. This can be done by the time card. You then have the whole thing right in your mitt, so to speak.

"What are some of the methods by which time is wasted, and which every tinship could and should avoid? I will enumerate them. Late starting; waiting a half hour for the shop to warm up. Lost time through having poor light. Lost time going to and from jobs. Lost time through employes leaving their jobs fifteen or thirty minutes before the proper time for quitting, when they think the boss will not know it. (Did you ever make it your business to drop in on the job about a

quarter hour before closing time and find all the men gone?)

"Then there is lost time through allowing visitors access to the work shop to converse with the employes.

"Time is also lost through cutting out unnecessary patterns, when only one article of a kind is needed. For instance, I well remember some years ago a mechanic who was supposed to be an A-1 man at his business had a furnace repair job to do in which a taper 90 degree elbow 10½ inches in length was needed. It took him two hours to lay off and make this elbow. A short time after, another job somewhat similar to the former came along and was given to another employe drawing the same wage as the first, and in less than half an hour the elbow was finished—in 25 per cent of the time, and this without a pattern at all. This waste could have been saved by giving the right job to the right man.

Overcoming Vast Waste of Time by Employes.

"Here are a few suggestions as to how to overcome this waste of time.

"If you have a number of employes and are not a practical mechanic yourself, or find that you cannot devote your time to overseeing the department, secure a good, live, competent man as foreman, and put it up to him to make good, giving him all the encouragement and incentive you can.

"Do as few 'thank you' jobs as possible. Have work planned ahead so that no man is kept waiting for a job when he is through with the one he has. Finish up every contract job as much as possible before beginning another. This applies especially to furnace work, roofing and troughing, where material and tools have to be carted to and from the job.

"Well, these are a few of the large gutters that carry away the profits that ought to remain with the tinshop proprietor. But there are also a few underdrains which are not quite so easy to detect as these bigger and more prominent leaks.

"I rarely find that any ordinary tinshops ever take the trouble to figure up to see if they have made anything on the contracts taken and completed. In fact, most of them could not if they wanted to, as no record is kept of the material used on the job.

"What is the result? When the next job comes along and a price is asked, the proprietor says, 'Well, I guess I came out all right the last time and I can do this job at the same rate,' and quite as likely as not he loses money on both jobs.

"The taking of contracts too cheap is, to my mind, a serious leak and a very common one.

"Failure to charge work done is another leak. If we just had the value of all work done and not charged through forgetfulness each year, it would enable most of us to take a few weeks' holiday with a liberal portion of spending money.

"Failure to collect and bring back goods left over from jobs is another source of loss. I personally have discovered goods left in other people's cellars when jobs were completed—forgotten for years and only found by accident. The loaning of tools is another leak which could be remedied by charging them up against the borrowers until they are returned. Everything should be charged up against the job done, including cartage, which is an item often forgotten. And it never pays to put a $3 man at a $1.50 job."

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*Solving Problem of Conducting Water Over a High Comb.**

Sometimes the artisan fails to visualize his complete work in the making, and when the job is finished finds himself confronted with an awkward or unseemly result. A not infrequent result of such a failure follows. An extension has been built up against the side of a building and the comb is so high that it will scarcely finish up under the eave of the main building. As the owner wants all of the water shedding on the extension roof conducted to the left from the main roof over the comb of the extension for cistern purposes, a problem is encountered.

The situation could be handled very nicely with an ordinary roof gutter, but in this instance that was not satisfactory to the owner. The eave trough could have been hung the full length of the eave if the comb of the lower building had been cut down to accommodate it, but that would have made an ugly piece of work inviting leakage and affording a catch-all for leaves and rubbish which would have eventually resulted in a rusted-out metal trough.

So the following plan was used: A 5-inch trough was hung in the usual manner, extending as near to the comb on the left as an end piece mitred to the angle of the roof would allow; then a square cornered flash made from eave-trough, having its back part turned down flat, was inserted under the first row of shingle above the eave course, the length was given a slight pitch toward the hanging trough and extended some inches over or past the end of the trough to insure all the water running into it and not being blown back of it in case of a high wind.

A second flash may be inserted under the third row of shingles if necessary to reach the gable. It will empty into the first flash, which in turn empties into the hanging trough beyond the comb.

As a precaution against these flashes being bent or broken down under the weight of snow or slush ice, roof strips should engage the bead in front of the flashing and be nailed back upon the roof. A cleat over the bead at the bottom end of flash, and nailed to the roof will hold that corner down solid. The front should be no higher than necessary to carry the water, say two and a half to three inches, then it will not show at all from the ground.

***Written especially for American Artisan and Hardware Record by L. S. Bonbrake, County Hospital, Peoria, Illinois.**

If you want work well done, select a busy man—the other kind has no time.

Dependable Work and Fair Price Policy Builds Business for Ward.

Some folks believe in the old method of plodding along in the tracks of their forefathers; others believe that speed is all essential to success. Get things done regardless is their attitude. Then there is the man who travels a middle course; he who is a specialist in his line and who conscientiously tries and succeeds in doing things to the best of his ability; who succeeds in building up a reputation for good work and a square deal to everybody. This type of man is not afraid to ask his price for his work and he gets it.

H. H. Ward is just such a man as the latter described above. Mr. Ward's ads speak for themselves and they smack of the air of dependability and character. The ad was reprinted from the *Chester* (Pennsylvania) *Times*.

H. H. Ward Appeals to the Desire for Fair Play and Dependable Work for His Repair Work.

It Is Within Yourself What Life Will Bring You.

Life, health, happiness and success depend largely upon our ability to overthrow a fault, bridle a wrong inclination and overcome our own weaknesses.

Self is the one big enemy with which everyone must deal hand to hand—it must be trained and disciplined to do the bidding of the intellect. Mind must rule matter in order for us to do anything worth while.

Self-denial and self-restraint are the foundation stones of real character.

How Far Can Large Buyers Be Limited on Discounts?

Does it really pay to allow certain elements, because of purchasing power at the command of a small percentage of distributors, to take away the incentive of just profit from a far larger class of distributors and thereby force upon this larger class the necessity of turning to private brands with which to compete?

Gratiot Sheet Metal Works, St. Louis, Established in New Home.

The Gratiot Sheet Metal Works announces that it is now settled in its new home at 3207 Ivanhoe Avenue, St. Louis, Missouri.

This firm does guttering, spouting, roofing, cornices, etc., and Henry W. Brand is the proprietor.

Matthiessen & Hegeler Zinc Company, Moves New York Office to Trinity Building.

The Matthiessen & Hegeler Zinc Company, La Salle, Illinois, has moved its New York office to Suite 812, Trinity Building, 111 Broadway, New York City.

John L. Glover, Eastern Sales Manager for the firm, is in charge of this office. He is assisted by William A. Cook.

Appreciates Helpful Information in AMERICAN ARTISAN.

To American Artisan:

Enclosed you will find check for another year's subscription, and again I must say that I very much appreciate the help I am getting from every issue, in pattern drafting and in many other ways.

May you long continue in the good way you go.

Frank Rimnac.

Lonsdale, Minnesota, August 23, 1923.

Notes and Queries

Sheet Aluminum.

From L. D. Hold, Oelwein, Iowa.

Please advise me where I can buy sheet aluminum.

Ans.—S. Birkenstein and Sons Company, 1056 West North Avenue; Aluminum Company of America, 110 South Dearborn Street, and United Smelting and Aluminum Company, 80 East Jackson Boulevard; all of Chicago, Illinois.

Sheet Metal Boat Patterns.

From J. C. Ziegler, 1209 Bluff Street, Wichita Falls, Texas.

Can you tell me where I can secure patterns for sheet metal boats?

Ans.—H. F. Thompson Boat and Pattern Works, Decorah, Iowa.

"Imperial" Hot Water Heater.

From Stove Dealers Supply Company, 310 Chestnut Street, Milwaukee, Wisconsin.

Kindly tell us who makes the "Imperial" hot water heater.

Ans.—Utica Heater Company, Utica, New York.

Address of Hart and Crouse.

From W. R. Brown, 6729 Hamilton Avenue, Pittsburgh, Pennsylvania.

Where is the Hart and Crouse Company located?

Ans.—Utica, New York.

Address of Model Heating Company.

From George Bishoff, Marinette, Wisconsin.

Will you kindly furnish us with the address of the Model Heating Company, makers of Model boilers?

Ans.—This concern was taken over by the Richmond Radiator Company, 217 East Illinois Street, Chicago, ten years ago, who can furnish complete repair parts for the Model boilers.

Non-Member Makers, Jobbers and Retailers, Invited to Hardware Convention, Atlantic City, October 17 to 19.

Better Hardware and Its Economical Production, Distribution and Sale to Be Main Theme at Convention.

HARDWARE manufacturers, jobbers and retailers, attention! The first official Board announcement regarding the forthcoming American Hardware Manufacturers' Association Convention, Marlborough-Blenheim Hotel, Atlantic City, New Jersey, October 17 to 19, has been issued by Secretary-Treasurer F. D. Mitchell.

In his letter to AMERICAN ARTISAN, Secretary Mitchell has given full details concerning the group meetings which will take place Thursday, October 18.

Secretary Mitchell's letter, which extends a cordial invitation not only to jobbers and retailers, but to non-member manufacturers also, follows:

To AMERICAN ARTISAN:

The American Hardware Manufacturers' Association desires to broadcast to those interested in the manufacture and distribution of hardware and its allied specialties, the salient points in the business program adopted for its forthcoming convention at the Marlborough-Blenheim Hotel, Atlantic City, New Jersey, October 17 to 19, 1923.

The potential value of this program lies in the fact that it initiates the long contemplated idea of the officers of our Association to bring the makers, jobbers and retailers to a fuller understanding of the ways and means to properly discharge their joint obligations to the users of hardware.

The two outstanding features of the convention are; namely, that the doors will be opened wide; not only will jobbers and retailers be welcome, but it is earnestly hoped that non-member manufacturers will attend and enter into our discussions; to facilitate exchange of information, knowledge and judgment, separate meetings will be held of the six industrial groups of our Association.

At these group meetings, which will occupy the entire day Thursday, October 18, selected timely topics important to the industries represented in each group will be discussed by manufacturers, jobbers, retailers and special speakers outside of the three interests.

While the discussions will cover the widest possible range, it is planned that each will contribute something of value to the main theme of "Better Hardware and Its Economical Production, Distribution and Sale."

On Wednesday afternoon, October 17, speakers, who from personal experience have a real message, will talk upon "The Manufacturers' Fundamental Problems" and "The Methods, Costs and Problems of Distribution."

To further make this convention beneficial alike to the manufacturers, jobbers, retailers and consumers, we will, on Wednesday morning, have addresses by the Presidents of the four national Associations covering the hardware field.

It is my personal belief that this convention is going to be of far greater importance than any previous meeting of our Association.

F. D. MITCHELL,
Secretary-Treasurer.

The following classification of the industrial groups will be carried out, the reason for the classification having been explained in the letter above:

Industrial Groups.

The primary purpose of dividing the membership into groups is to provide a practical way for members to exchange information, opinions and experiences.

Agricultural.

Group 1—Implements and Supplies for Farms and Gardens—W. A. Graham, Chairman, Wallingford Manufacturing Company, 113 Chambers Street, New York, New York.

Transportation.

Group 2—Tools and Supplies for Railways, Automobiles, Carriages, Horses, Ships and Aeroplanes—J. E. Stone, Chairman, The Stanley Works, New Britain, Connecticut.

Builders' Hardware.

Group 3—Hardware, Tools and Supplies for Buildings—Murray Sargent, Chairman, Sargent & Company, New Haven, Connecticut.

Mill Supplies.

Group 4—Tools and Supplies for Industrial Plants—J. Harvey Williams, Chairman, J. H. Williams & Company, Brooklyn, New York.

Housefurnishing.

Group 5—Furnishings and Fittings for Dwellings or Commercial Buildings—C. W. Asbury, Chairman, The Enterprise Manufacturing Company, Philadelphia, Pennsylvania.

Sporting Goods.

Group 6—Articles for Sports, Amusements and Personal Use—E. R. Galvin, Chairman, E. I. du Pont deNemours & Company, Wilmington, Delaware.

Aubrey Accepts Position with Geller, Ward Hasner, St. Louis—Begins September 1.

As the saying goes, "It's an ill wind that brings no one good." In this case what is Elgin's loss is gain for St. Louis. E. E. Aubrey, field secretary of the Illinois Retail Hardware Association, living at Elgin, Illinois, has accepted a position with Geller, Ward & Hasner Company, a St. Louis, Missouri, wholesale hardware company.

Mr. Aubrey expects to take up his new duties September 1. He has the best wishes of the trade in his new venture. Mr. Aubrey is well known in Rotarian circles at Elgin.

Atlas could never have carried the world had he fixed his thoughts on the size of it.

Indian Summer! Oh, Boy! What a Wonderful Chance to Get Back to Nature!

How About Letting a Good Fall Window Display Lead the Way to an Increase in Tire Sales.

AFTER torrid heat of the past few months, the arrival of cool nights is certainly a relief. The thought of having to use a covering at night a few weeks ago would have been a punishment indeed. But now in order to have a peaceful rest, a covering is a necessity. However, the thought of blankets and robes opens a new hall of observation in the mind's eye. Think of the delights of touring through the mountains in the bracing air of an early fall morning, with the motor purring joyfully and a heavy covering over your knees. What bliss! What happiness!

To the hardware man who wishes to cater to this class of trade—the tourist—the fall season brings an exceptional opportunity for window display work. Think of making a window display in harmony with the thought and sentiment of Indian Summer! Imagine what beautiful color combinations are possible! And so easy of accomplishment, too! It is only necessary to follow in the path of nature. She will lead the way. Take your lessons from her!

Howard C. Crabb, who arranged the accompanying illustrated window display for the Belcher and Loomis Hardware Company, Providence, Rhode Island, has caught the spirit and has transferred his thought to a window display which indeed expresses the sentiment of Indian Summer. Take a good look at the picture and see if you do not get the spirit. It is simply wonderful! So artistic! so aristocratic in its appearance! Note the discolored leaves, the ripened grapes, the blankets, the tires and all! Simply irresistible.

It will also be noted that the card of a taxidermist is placed in the window. This is an act of courtesy, as the skins and robes were procured from this source.

Romance in Business! Howard C. Crabb Finds Plenty of It and Doesn't Mind Expressing His Romantic Thoughts When It Comes to Business.

Here is what Mr. Crabb says:

"The color scheme was of brown. The curtains in the back were dark brown, the frame and platform of the setting a lighter brown, and the panel in the center a still lighter brown. The garland of oak leaves was shaded from dark brown to light brown, with touches of yellow and red. Bunches of grapes here and there helped to add life and color to the display.

"Four auto robes, one tire and tube was all that was shown. The parrots helped to add life to the display."

2.8 Per Cent of Sales Is Nebraska Hardware Stores' Profit.

The average cost of doing business for the retail hardware stores in Nebraska during 1922 was 25.2 per cent of the net sales. The net profit for the average store amounted to 2.80 per cent of the net sales. These figures are the result of a careful investigation made by the Committee on Business Research of Nebraska University of 51 stores in the state. The report shows that the majority of the stores had net sales under $40,000.

The following table shows the operating expenses of 51 stores in Nebraska during 1922. Each individual item represents a "common" figure, that is, a figure which has appeared most often in the accounts of the 51 stores investigated.

The percentages in the table are in relation to the net sales, which are to be considered at 100 per cent.

	Per Cent
Wages of sales force	4.76
Advertising	0.76
Wrappers and containers	0.15
Total Selling Expense	5.08
Delivery	1.19
Proprietors' salaries	9.01
Office supplies	0.19
Communication	0.15
Total Management Expense	9.37
Rent	2.47
Heat, light and water	0.80
Taxes	0.70
Insurance	0.56
Depreciation	0.66
Interest	0.25
Contributions	0.14
Total Fixed Expense	6.41
Miscellaneous	0.66
Losses from bad debts	0.61
Total expense	25.28
Gross profit	27.41
	Per Cent of Net Sales.
Net profit	2.80

Each total expense figure necessarily does not represent the sum of the individual expense items because of the fact that each total expense figure also represents a "common figure" arrived at by using the total expense figure found most often in the accounts.

Stock turnover ranged from one to three times a year. The rate of stock turnover was found by dividing the total amount of goods sold, expressed in a figure showing what these goods cost, by the average inventory at cost prices.

Expenses Decrease.

In a comparison between conditions of the trade in 1921 and 1922, it was found that 29.8 cents out of every dollar of net sales in 1921 went to pay operating expenses. This 29 per cent of sales is 3.8 per cent more than the common figure for operating expenses shown by the 51 stores in 1922. Two cents of the dollar were spent for delivery in each year, over 6 cents for fixed expense, which includes water, insurance and taxes; about 11 cents for selling expense, and about 70 cents to pay for the merchandise sold. In 1921 the net profit amounted to less than half a cent out of each dollar of sales, and in 1922 to less than 3 cents.

In making the investigation the committee uses a "common figure" instead of an average one in order to show conditions as they really are rather than to show a theoretical figure which might not represent the facts in any particular store in the state. For example, of the 51 stores whose expenses were investigated, the lowest total fixed expense reported was 3.06 per cent of the net sales and the highest 13.40 per cent. Instead of striking an average between these two, however, the committee uses a figure that is found most often in the stores' reports, namely, 6.41 per cent.

A comparison of expenses in 24 stores during 1922 with the identical 24 stores in 1921 shows a decline in the operating expense figure for 1922. The total operating expense figures were 3.87 per cent of the net sales less in 1922 than in 1921.

Bicycles Pay Good Profit with Little Investment.

Fewer hardware dealers handle bicycles now than when the craze was at its beginning, yet that branch of trade is, all things considered, more satisfactory now than it was then. It is not necessary to carry a large stock; in fact, many hardware dealers sell solely from samples. Purchasers are not as hard to please, their desire being to secure a good, serviceable bicycle at a fair price.

One small city firm which has handled bicycles for years states that they constitute a paying department. They sell entirely from samples and are not therefore hampered with a large stock. The wheels that they do carry are always prominently displayed. In summer one of the windows is often used for a bicycle display. They advertise in the newspapers, put on these displays, and sell quite a number of wheels each year from samples.

Here Is a Good Place to Start Hardware Business.
Location—Cygnet, Ohio.

When the Worrel Hardware Company moved to Fostoria, Ohio, the town of Cygnet, Ohio, was left without a retail hardware store. H. E. Graham, Secretary-Treasurer of the Oil Belt Telephone Company, Cygnet, writes:

"Cygnet should have a hardware store. We have a population of 600, plenty of work and good wages. We are located in the oil fields and have two large pumping stations. Farming here is very good. The town will welcome a good hardware merchant." Mr. Graham, it is said, will be pleased to hear from any interested hardware man.

Sales Possibilities in Rat and Mouse Traps.

Hundreds of thousands of dollars are spent each year in advertising rat poisons, but hardly ever is anything done to further the sale of traps, and yet the superiority of the trap over poison is enormous. In a recent government test, the following results were shown:

With practically even possibilities in setting traps and placing poison, of 9,932 rats secured in one test, 8,716 were trapped and 1,216 poisoned. In another test, of 8,364 secured, 8,148 were trapped and only 216 poisoned.

The Lovell Manufacturing Company, Erie, Pennsylvania, has issued a small booklet explaining some of the rat trap possibilities. The folder is well illustrated with various kinds of rat and mouse traps. One of the illustrations depicts a bushel basket filled to the brim with traps. On the top of the basket is placed a placard with the words: "A bushel of mouse traps, three for 10 cents while they last." For further information write to Lovell Manufacturing Company, Erie, Pennsylvania.

Your Customers Expect You to Advertise.

Did you ever figure that customers actually expect to be advertised to before they make up their minds what to buy and where to buy it.

A recent issue of *Printer's Ink* makes this statement: "Advertising practice has so lifted the thoughts of the public that people expect to be advertised to before they purchase, and have learned to depend upon the education to be obtained in this way."

Your customers and the people of your community are looking for you to tell them of the good values and the service which you have to offer them. Are you telling them this story well planned, well directed advertising? If you are not, you may be sure that others are doing so.

You can hardly blame the buying public for deciding that you have no story to tell if you do not remind them by constant advertising, and for patronizing the man across who is not so modest in telling of his store and its good values.

How to Make Your Store Front Bring More Sales.

1. The store front should have character and make a good appearance.
2. Make the windows all glass, dust-proof and frost-proof.
3. Have your windows well lighted.
4. Plan your windows to overcome reflections.
5. Change backgrounds frequently.
6. Have all merchandise thoroughly cleaned before placing in the window.
7. See that window is cleaned throughout.
8. Do not let window decorations conflict with the merchandise.
9. Do not crowd the merchandise.
10. Pose the merchandise in a broken line so it won't look like a row of ninepins.

Coming Conventions

Joint Committee on Standardization of Registers will meet at Waldorf-Astoria Hotel, New York City, Tuesday, September 4. Chairman, R. W. Menk, Excelsior Steel Furnace Company, Chicago.

Automobile Accessories Branch National Hardware Association, Hotel Shelburne, Atlantic City, New Jersey, October 15 to 19.

The National Hardware Association and the American Hardware Manufacturers' Association, Atlantic City, New Jersey, October 16, 17, 18 and 19. F. D. Mitchell, 1819 Broadway, New York, is Secretary and Treasurer of the Manufacturers; T. J. Fernley, Secretary of Jobbers.

The twenty-fourth annual convention of the National Federation of Implement Dealers' Associations will be held at Hotel Sherman, Chicago, October 17, 18 and 19, 1923. H. J. Hodge, Abilene, Kansas, is Secretary.

Mountain States Hardware and Implement Association Convention, City Auditorium, Denver, Colorado, January, 1924. W. W. McAlister, Secretary-Treasurer, Boulder, Colorado.

Western Retail Implement and Hardware Association, Missouri Theater Building, Kansas City, January 15, 16, 17, 1924. H. J. Hodge, Secretary-Treasurer, Abilene, Kansas.

The West Virginia Retail Hardware Association, Convention and Exhibit, Huntington, West Virginia, January 15 to 18, 1924. James B. Carson, Secretary-Treasurer, 1001 Schwind Building, Dayton, Ohio.

Kentucky Hardware and Implement Association, Louisville, January 24-25, 1924. J. M. Stone, Secretary-Treasurer, 202 Republic Building, Louisville.

Indiana Retail Hardware Association, Inc., Convention and Exhibition, Cadle Tabernacle, January 29, 30, 31, February 1, 1924. G. F. Sheely, Secretary, Argos.

Nebraska Retail Hardware Association, Lincoln, Nebraska, February 5 to 8, 1924. George H. Dietz, Lincoln, Nebraska, Secretary-Treasurer.

Wisconsin Retail Hardware Association Convention and Exhibition, Milwaukee Auditorium, February 6, 7, 8, 1924. George W. Kornely, Manager of Exhibits, 1476 Green Bay Avenue, Milwaukee. P. J. Jacobs, Secretary-Treasurer, Stevens Point.

Michigan Retail Hardware Convention and Exhibition, Grand Rapids, February 12, 13, 14, 1924. Karl S. Judson, Exhibit Manager, 248 Morris Avenue, Grand Rapids. A. J. Scott, Secretary, Marine City, Michigan.

The Pennsylvania and Atlantic Seaboard Hardware Association, Incorporated, convention and exhibition at the Philadelphia Commercial Museum, Philadelphia, Pennsylvania, February 12, 13, 14 and 15, 1924. Sharon E. Jones, Secretary-Treasurer, Wesley Building, Philadelphia.

New York Retail Hardware Association Convention and Exhibition, February 19, 20, 21, 22, 1924. Headquarters, McAlpin Hotel, and Exhibition at Seventy-First Regiment Armory. John B. Foley, Secretary, 412-413 City Bank Building, Syracuse.

The Ohio Hardware Association, Convention and Exhibit, Cincinnati, Ohio, February 19 to 22, 1924. James B. Carson, Secretary-Treasurer, 1001 Schwind Building, Dayton, Ohio.

The Missouri Retail Hardware Association, Convention and Exhibition, Marquette Hotel, St. Louis, Missouri, February 26, 27 and 28, 1924. F. X. Becherer, Secretary, 5106 North Broadway, St. Louis, Missouri.

Retail Hardware Doings

California.

H. S. Tague has opened a hardware store at Stockton.

N. N. Hamstedt has recently purchased the hardware and paint stock of the C. E. Ellsburg Company, Turlock, and has moved it to his store in the Security State Bank Building. The store will open for business today.

Iowa.

The F. M. Jaeger Hardware Company of Dubuque has purchased the double store building on Main Street, between Seventh and Eighth Streets, now occupied by F. W. Woolworth Company. As soon as the building is vacated, the Jaeger Hardware Company will move in.

Glen Brundin has purchased the hardware store of L. H. Beaty at Wyoming.

Minnesota.

At Zimmerman, the Zimmerman Hardware Company's store was destroyed by fire. The loss is estimated at $15,000.

Charles Perry Sold 43 Monarch Ranges in 1922 by Going After Business Hard.

And This Was Done in Southern Nebraska, Where People Say Farmers Had No Money.

SITUATED in the southern part of Nebraska, where retail business is entirely dependent upon agricultural conditions, is the prospering town of Harvard.

As in numerous other one-crop territories, the average merchant considers the grain market a business barometer and after experiencing a poor year, is satisfied to sit back and wait, hoping for better crops next year.

However, in every community, large or small, there is at least one enterprising merchant who always maintains a steady business year after year. Harvard's Benjamin Franklin is a hardware merchant by the name of Charles Perry.

Mr. Perry sold more ranges during 1922 than any previous year and with more profit, although most merchants will tell you that 1922 was not a good year for ranges. He believes that conditions are only half as bad as the farmers would have him think, and acting on this belief, he saw his opportunity and when most dealers thought the farmer was too poor to buy, Mr. Perry sold forty-nine ranges in less than a year. On hearing of this remarkable sales record, I asked him to write an article for AMERICAN ARTISAN, telling how he accomplished this feat in a year which was admitted as being a poor one for the retailer, so others might benefit by adopting his methods. His answer was:

"I don't think I could tell you how it is done because I hardly know myself, but I have so much faith in the range I am selling that it is not hard to convince a prospect after a thorough demonstration."

I then asked Mr. Perry why he had decided to make a drive for range sales when the farmer was not supposed to have the means to make an investment of over a hundred dollars for one article. His reply indicates that he had the foresight to grasp opportunities, and it is this type of merchant who has brought about the improved business conditions which we now enjoy.

"I had listened to the complaints of my trade day after day and I knew that if I offered sympathy I would not be improving conditions, so I usually changed the subject to more optimistic views.

"I have a prospect list which I keep up to date, and on looking it over one day I decided the time had come to sell ranges while other merchants were not pushing their lines. I laid out a definite course of action, as I always do when I begin a sales campaign, and followed it through. I selected the ten most likely prospects from my list. I knew that if I could sell these ten, others would follow later. This prospect list contained about thirty names and only a week before I had thought it nearly worthless, but it proved to be the most valuable document in my store safe. It furnished the clue for a beginning of better business which has continued and is paying big dividends.

"I am selling the 'Monarch' Malleable Range. I had four on hand, so I wrote the factory to ship me six more. That was one for each of the ten prospects I had selected and as I mailed the order I knew I would have to concentrate all my efforts to selling ranges or I would be overstocked. The second move was the advertising which I ran in the local newspapers. These advertisements never bring in any prospects who say that they saw my "Monarch" range ad in the paper, yet I know that they see it and that it pays better than any other publicity I could use. Then, too, it pays to associate my store name with the better trade-marked goods on the market. People know that I sell the

Mr. Perry in one of his advertising stunts during a Fourth of July celebration. The decorated truck was loaded with a range and a lot of kitchen utensils, which were given out to the crowds as the parade passed through the streets.

best and naturally connect my store with quality.

"In spite of the rather poor crop in this section last fall, and the low value of the grain, I sold the ten ranges and more, too. I did not stop when the ten were gone, but ordered more from the factory, for I had secured more prospects through the publicity I had given the line. When I sell a woman a new range she starts boosting, and I guess it is a matter of jealousy that makes her neighbors want one, too. At least my sales seem to come that way and each year my range sales have increased, and I now have a list of over three hundred satisfied users in and around Harvard.

"Last year I sold forty-three of the quality ranges and six cheap cook stoves, and I am going to do still better this year. I know that I can do it because I have a definite plan of selling which never fails Anyone can do as well if they will follow it. Of course, it is necessary to know how to demonstrate a range. I can do it nearly as well as the factory salesman.

"First, know all the features of the range you are selling and what they mean to the user.

"Second, keep a prospect list all the time. You will be surprised how fast this list will change and grow.

"Third, advertise. I spend about 5 per cent of the retail value of the ranges for newspaper publicity and other methods which will increase the prestige of the line I am selling.

"Fourth, follow up the prospects on your list systematically by personal calls, mail, picture slides, etc.

"Fifth, sell on the deferred payment plan when necessary.

"I do not believe in the factory demonstration plan, because I have found that my prospects are more apt to believe me than a factory man whom they do not know, and that method adds to the expense and cuts the profit. I might say that I have sold ranges not because of the factory demonstration, but in spite of them, for other dealers have tried it both in Harvard and nearby towns, but without much success."

Why Stick to Advertising Budget When Shown that Extra Effort Will Bring Added Profits?

Is Your Business Made for the Budget, or Is the Advertising Appropriation Arranged in Accordance with the Needs of Business?

ALTHOUGH it may be wise for a nation to lay down an iron-clad budget for a war department on a peace basis, it is not sound business for a company to stick to an iron-clad budget in the sales and advertising departments when it is evident that extra effort will be rewarded with extra profits or progress—or that the failure to make an extra effort will result in loss of ground to some aggressive competitor.

It seems fundamental in making an advertising budget that the budget be made for the business and not the business for the budget. That is, every budget should be flexible and the sales or advertising department should be encouraged to present future possibilities and needs from time to time.

There are seasons during the year when every business experiences a lull. Many firms have succeeded in ironing out these valleys by a progressive policy of advertising. In order to place advertising most profitably it will be incumbent upon the advertiser to regulate his space buying in accordance with the trend of business. When the season of the year when business ordinarilly falls off approaches, counteract this falling off by increasing your advertising space. When natural interest begins to lag it simply means that you will have to work harder in your advertising. When people are asleep you will have to use larger space to wake them up.

Range Advertisement that Produced Good Results.

We are presenting two advertisements used by dealers to stir up activity in the sale of stoves. The first is reprinted from the Green Bay (Wisconsin) Gazette and is a representative ad for its purpose. The arguments in the ad are very good as they are, but the ad would have been improved had the illustration been made small. This would have permitted the use of a large headline, introducing the subject. The signature of the ad is well placed.

The second ad is reprinted from the Bloomington (Illinois) Pantagraph. The quotation of prices as shown in this ad is an excellent practice. However, there are sev-

eral features which are contrary to the general practice in the best of advertising circles. The ad would have been more attractive had the signature at the top been omitted. A good headline could have been used with much greater profit. The illustration in the ad is very good, although it is somewhat misleading. It will be noted that the sale is on house furnishings, therefore, it would have been better to run a so-called departmentized ad, taking one or two items at a time or using space large enough to permit the use of small illustrations for the items offered at the sale. This would have permitted a much more intelligible presentation of the items offered.

Allowing Special Cash Discounts on Ranges.

Stove Advertising Makes Poor Showing in Chicago Newspapers.

In the August 26th issue of the *Chicago Tribune,* the Sunday edition, there were nearly 350 column inches of advertisements of musical instruments—pianos, phonographs, saxophones, etc.

In the same paper there were 46 column inches of stove advertising and a large portion of this was used by the gas company.

The Tuesday, August 28th, edition of the *Chicago Daily News* contained 103 column inches of musical instrument advertising and 17 column inches of stove advertising—also gas ranges.

Is there anyone who will really claim that the last few days of August are not good days for stove selling?

Is there anyone who really believes that the latter part of August is a good time to sell musical instruments?

And yet, retailers of this class find it profitable to go after business with advertising that says something.

While stove retailers—as a class—are unwilling to let people know that they have something that is really needed. And bear in mind that Chicago is no different from any other city or town. The same general condition, so far as advertising is concerned, exists practically everywhere else.

Is there not a possibility that the reason for slackness in the stove business is right there—in the fact that the average stove retailer does not push his wares sufficiently?

If people can buy pianos or phonographs—and they can and do buy them—they can buy stoves.

But they will spend their money with those who ask them, and you cannot blame the people.

Think it over.

Jones Plays Up Summer Comfort to Sell Oil Stoves.

Good will does not spring up over night. It is something that must be guarded carefully and nourished constantly, in order that it can have a clean, healthy growth. This takes time and effort. Good will can only be built up by a consistent, straightforward effort.

Note Prices in Heavy Type.

Advertising can help in building good will, but it can also be as detrimental to and tear down good will if it is not judiciously guarded. Advertising copy to produce good results and at the same time build good will must tell the prospect something that he ought to know about an article which will add to his comfort, convenience or happiness in some way. It must, above

all things, be truthful to its trust. It is responsible to the public for the dissemination of accurate and reliable information about a certain article. If it betrays its trust, the firm will soon suffer, because no firm can prosper without customers.

The accompanying reprint from the Otsego, Michigan, *Union* is an example of a profitable use of small space. In the headline of this ad the copy-writer has resorted to the well-known phychology of the direct command. The illustration is good and well placed. The boldface type price quotations are well placed. The use of scroll work in the signature should be discouraged, as it tends to increase the difficulty in reading.

Common Sense Reasoning Sells Stoves for Piatt.

When winter comes you will want a heating stove. What more logical statement could be used to attract the attention of the prospective customer? The reason why some men are successful is simply because they stick to common sense when they want to do a thing. They do not go flying off into all sorts of phantasmagorical fantasies in conducting their business.

In the accompanying ad, reprinted from the Shelbyville, Indiana, *Democrat,* Ben F. Piatt has done that very thing; he has stuck to common sense and carried his common sense arguments to the public in a common sense manner which never fails to produce results.

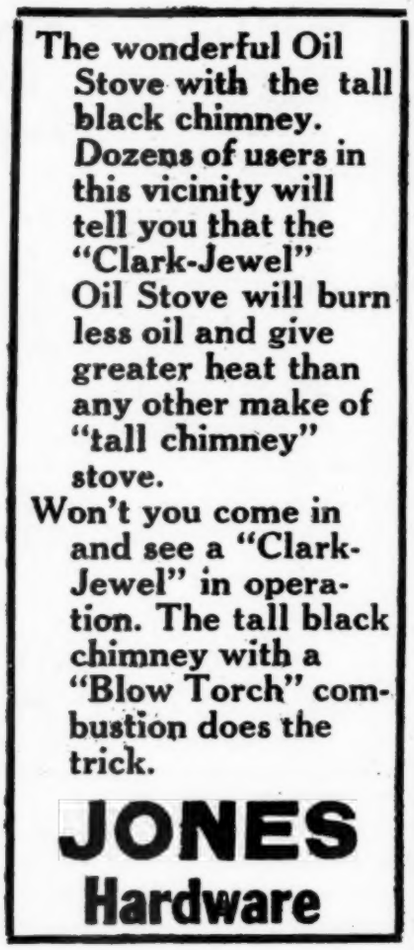
This ad is designed to stimulate business at a time when business is naturally slow. This is an excellent practice and is adopted by all live-wire firms who believe that they can create business if they put forth the effort.

In all of these efforts to get business the firms who make their appeal through the common sense avenue never fail to take cognizance of the human element in selling. They realize that people have emotions as well as reasoning power and the emotions carry them away in spite of reason. This is a very good piece of copy and undoubtedly proved profitable.

Piatt Gets Down to Brass Tacks.

Jones Stresses Blow Torch Combustion to Move Stoves.

The appeal to see a demonstration of the object advertised is a very good way of introducing the subject under consideration. There is, however, some difference of opinion as to whether it is better to have a factory representative do the demonstrating or whether the proprietor or other competent person should be called upon to do it. Some dealers say that the factory representative would know about the stove and could demonstrate it to a better advantage. On the other hand it is contended by some that the proprietor is personally acquainted with so many of the prospects and would, therefore, inspire more con-



Featuring Economy.

fidence by doing the demonstrating himself.

The accompanying ad, reprinted from the *Peru* (Indiana) *Journal*, is direct in its appeal and easily read, but it would have been much better if a headline had been used to introduce the subject. A headline something on the following order would have added much to the pulling power: "That Wonderful Oil Stove" set in large type would have made the appeal much stronger.

Inviting Comparison with Competitors' Articles Practiced By Live-Wire Store.

In every article offered for sale there is some distinctive feature or some special character which can be used as a selling point. It is up to the advertiser to find what this point is. There is only one way that this can be done and that is to study thoroughly the work which the article is to perform and then from that point build up arguments which will point out why the article can perform the task or serve the purpose better than any other article doing the same work.

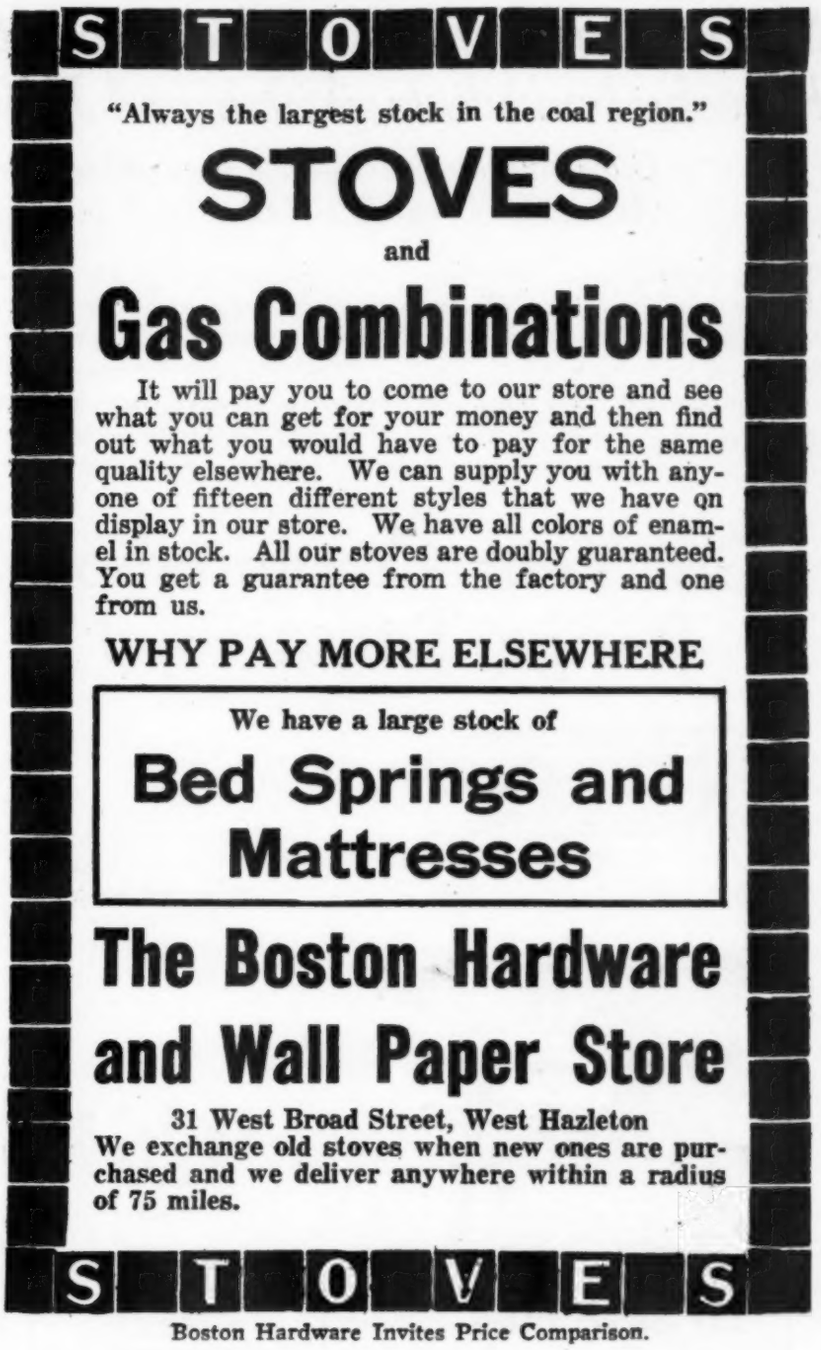
By this we do not mean that time and space should be used belittling a competitor's products; this is a waste of time and money. But direct your efforts to showing why your article should be used and what it will accomplish.

The accompanying ad is reprinted from the Hazelton (Pennsylvania) Standard Sentinel.

This ad actually invites comparison. There is no belittling of competitors here. Then too the point of safety is stressed by the double guarantee.

There exists in the mind of every woman the desire to improve the looks of her kitchen. But when she thinks of purchasing a new stove the problem of the old one on her hands presents an obstacle. The ad has very cleverly forestalled this objection by offering to exchange the old stove for a new one.

A few suggestions will not be amiss here, however. The border of the ad is too heavy; it detracts attention from the reading matter. A small illustration would have improved matters a good deal.



Boston Hardware Invites Price Comparison.

May Redeem Stamps for Cash Only.

A legal opinion given by the State Attorney General's Department of Wisconsin on the issuance and use of trading stamps in Wisconsin is of interest to retail merchants generally.

Under the Wisconsin trading stamp law all trading stamps must be redeemed in cash, and the cash value of each stamp must be imprinted on the stamp. A trading stamp, sent to the Attorney General by the District Attorney of Ashland, Wisconsin, for an opinion, was declared in violation of the state laws on two counts, because it was urged that the holder of the stamps redeem them in trade, and because the stamp-book declared that they would be redeemed only when stamps with a redemption value of $1.00 were presented.

It was held that stamps issued to give a rebate on purchases must be redeemed in cash and not in trade, and must be redeemed when twenty-five cents' worth are presented.

Special Inducement Advertisements Are Designed to Provoke Immediate Action and Effect Rapid Turnovers.

Gross Hardware, Milwaukee, Wisconsin, Makes Excellent Appeal for Immediate Action in Accompanying Advertisement.

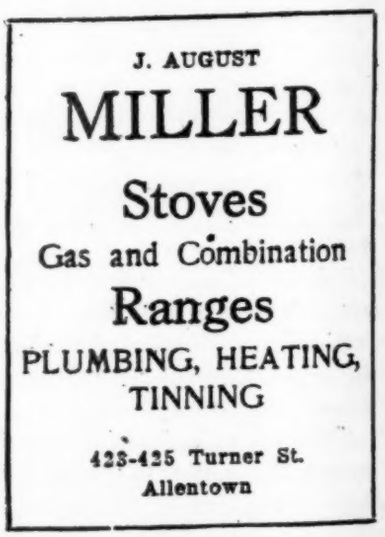
THE accompanying advertisement, reprinted from Milwaukee *Journal,* is a good example of the special inducement offer. The headliner and the illustratinos are very good. The typography of the ad could not be improved upon and it shows that considerable study and thought have been given to it.

The free offer for immediate decision is always good. The offering must be something with utility value and the Gross Hardware showed good judgment when they picked out an article which they knew was recognized by their prospects as being especially desirable and well worth the price.

There is some question regarding the advisability of offering terms in the ad. This, of course, is a matter which can not be answered definitely by any fast and set rule. Some merchants may find that in spite of the extended time element required, they can move their stock more rapidly. Others may differ here and declare it impossible to make a satisfactory profit by giving terms, claiming the added risk, etc.

* * *

The accompanying advertisement, reprinted from the Bethlehem, Pennsylvania, *Times,* is undoubtedly used for the purpose of keeping the name before the public or merely as a rate holder. As such the ad will serve its purpose very well. Mr. Miller could have made a much more profitable use of the same space had he placed his name at the bottom, so that the name and address would have been contiguous, instead of disconnected as they now are, and then placed a forceful head at the top of the ad.



Marked Stiffening in Commodity Prices Evident; Fall Buying Begins; Farmers Are Holding and Feeding Grain.

Non-Ferrous Metals More Active, but Buyers Still Cautious — Freight Movements Unusually Heavy.

BUSINESS marts present abundant evidence of an opening up of the fall business. Buyers seem to have lost their former attitude of hesitation, while the railroads are carrying the largest volume of freight for this time of the year in their history. Confidence is returning and it appears to be justified.

Better things apparently lie ahead of the railroads. The July reports of forty-five railroads show aggregate net operating income of $52,707,000, compared with $40,235,000 in July last year. At the same rate of gain, net income for all class 1 roads for July would total about $90,000,000, compared with $69,239,000 in July, 1922. The current estimate would represent the month's proportion of an annual return of 5.26 per cent on property valuation taken at $19,175,000,000, compared with 5.47 per cent in June and 4.04 per cent in July last year.

City buying has been exceptionally well sustained, but farming districts have not yet absorbed cars in the volume anticipated. It is still somewhat early to judge of the disposition of the farmer to buy.

The usual seasonal decrease in savings deposits is evidenced in reports from banks representing approximately 40 per cent of the savings deposits of the district, says the monthly review of the Federal Reserve Bank of Chicago. The largest decreases were reported by banks in Illinois and Wisconsin. Reports from Indiana and Iowa show a slight improvement.

Copper.

Domestic consumers of copper took up a fair tonnage of electrolytic at 14 cents, delivered, but not enough to affect the price position materially.

Some agencies advanced their quotation to 14.12½ cents, delivered, but copper has remained available in almost any quantity at 14 cents.

Casting copper reacted to 13.75 cents, refinery.

Lake has been obtainable at 14.25 cents, delivered. The price of rolled and drawn copper and brass products were reduced ¼ cent to ½ cent on August 23.

Unfilled orders of the mills have been declining steadily and deliveries accordingly improving. The decrease in prices of mill products has been a reflection of the competition for orders.

Lead.

The local market is firm with an improvement in the demand. Offerings of prompt lead are light, however.

Manufacturers of lead products report a steadily brightening outlook for fall business in all lines. The demand now extant is chiefly for September delivery. Holders of prompt lead have become reticent.

St. Louis quotations for prompt August and September are 6.60 to 6.70 cents.

Tin.

The tin market is again less active. There has been less buying on the advance of ⅜ cent over August 28 quotations. The foreign limits received figure about 40.75 cents but this price has been shaded ⅛ cent on profit taking and the business reported on Straits tin was mainly at 40.62½ cents.

The offerings of spot Straits have increased and that also is quoted at 40.62½ cents.

The American deliveries of tin during August are being estimated at from 5,500 to 6,000 tons with the probability that they will be close to the higher figure.

The stock of tin in New York on August 1st, was 2,037 tons and there have been arrivals at Atlantic and Pacific ports of 6,360 tons giving a total supply of about 8,400 tons. Not all of this is available for delivery, and the stocks including tin landing from vessels at dock, should be in the neighborhood of 2,500 tons at the end of the month.

Zinc.

The zinc market has been quiet and steady. The producers are not anxious sellers.

The effect of the recovery has been to steady the market and there were offerings of prime Western at 6.40 cents for August-September, without business, resulting, some buying interest is shown by operators at that price. The bidding, however, is not particularly active, and is not based on any immediate export business, London prices being too low. Such interest as there is, appears based rather on a desire to test, or perhaps, to study the market.

Producers show little inclination to press for business at present prices, considering them unwarranted from the standpoint of costs.

Quotations at East St. Louis for prompt, August and September shipment, are 6.40 to 6.45 cents; for October, 6.42½ to 6.47½ cents.

Solder.

Chicago warehouse prices on solder are as follows: Warranted 50-50, $25.25; Commercial, 45-45, $24.50, and Plumbers', $23.25, all per 100 pounds.

Tin Plate.

Probabilities now are that more tin plate business on books of mills will have to be carried over September 30th than was estimated a few weeks ago. There is no precise summation as yet, but practically all the mills that sold in regular way for the current quarter will have something to carry over, even on the

basis of estimating production between now and the end of the quarter at the highest point that can be considered.

The tin plate mills can hardly be said to have oversold for the current quarter, looking at the matter in the usual way, for the regular thing is for steel mills to be theoretically oversold, on account of the allowance usually made for some customers not specifying their contracts in full. This time substantially all the contract tonnage has been specified. A few hundreds of thousands of boxes at the outside would represent the unspecified portion of tin plate contracts at the present time, when in the ordinary course of affairs some contracts naturally fall short in specifications even when other contract holders would like to specify more than their contracts permit, as every buyer cannot gauge his business exactly right.

For some time past it has been plain that there was no particular occasion for modifying the $5.50 price, for fourth quarter. A higher price might easily be justified but the desire of the mills for stability would operate against their announcing an advance.

Tin plate production is running much the same as formerly, turns worked being in the neighborhood of 80 per cent of the theoretical number, which means production at say 85 per cent or normal capacity for this time of year.

Old Metals.

Wholesale quotations in the Chicago district, which should be considered as nominal, are as follows: Old steel axles, $17.00 to $17.50; old iron axles, $25.50 to $26.00; steel springs, $19.00 to $19.50; No. 1 wrought iron, $14.00 to $14.50; No. 1 cast, $17.50 to $18.00, all per net tons. Prices for non-ferrous metals are quoted as follows, per pounds: Light copper, 9¼ cents; light brass, 5 cents; lead, 4¼ cents; zinc, 3½ cents; and cast aluminum, 15 cents.

Sheets.

Improvement in the sheet market is made manifest in several ways. Increased specifications, more new inquiries, additional efforts to place tonnage for the fourth quarter, and a slight increase in operating schedules are noted.

Warehouse operators from whom nothing has been heard for two or three months have become active in furnishing specifications, seeking early replenishment of their stocks of different grades of sheets.

Auto parts makers, who a short time ago were anticipating slack business for the last four months of the year, are again placing orders. One which had decided that 10,000 to 15,000 tons under order would be sufficient for its needs, decided this past week to increase its bookings by 50,000 to 60,000 tons additional.

Average operation of sheet mills in this vicinity hovers around 85 to 88 per cent.

Prices are for the most part firm, there being practically no departures from the 3.00 cent, 3.85 cent, 5.00 cent and 5.35 cent base Pittsburgh levels on blue annealed, black, galvanized and full-finished automobile sheets, respectively.

The exception still appears to be black sheets, two or three mills which need tonnage being willing to sell at 3.75 cents, base Pittsburgh.

Sales in Pig Iron Still Small; Competition Prompts Slight Price Cuts in Some Districts.

Eastern and Southern Markets Quiet—Healthy Volume of Inquiry at Chicago, with Prices Firm.

AUGUST has proved to be a better month than July for the steel and iron industry. The Steel corporation is operating at 85 to 90 per cent of capacity, with the larger independents averaging 75 to 80 per cent. While this marks some letdown from last spring, the present rate of output is extremely large considering expansion of producing plants in the last eight years.

"With the end of the month at hand, producers and consumers of iron and steel find that August business was better than that of July," the Iron Trade Review says. "The reported awards of shape for the week mark the greatest tonnage since our weekly compilation was inaugurated in May, 1922."

Interest in pig iron is awakening in some slight measure at Pittsburgh. One consumer's purchase was from an interest outside the valley at $24.50, furnace, with the same freight rates as from the valley. Since, however, it, was high silicon iron and consequently of off-grade base, the market price of the standard article is unchanged at $25, valley.

Pig iron buyers at Chicago are less inclined to contract for requirements. A healthy volume of inquiry continues, and big buyers are placing small lots while awaiting developments. All dealers report August as a good month. It is estimated 120,000 tons of pig iron has been sold here in August against 80,000 for July. The week's sales include 3,000 tons of foundry iron to a Wisconsin melter, 1,000 and 300 tons lots of foundry to a Wisconsin melter; 1,000 and 500 tons to two Chicago foundries, and 800 tons of malleable for the fourth quarter to a Wisconsin foundry. Prices generally are firm at $27, Chicago furnace. Resale southern iron is placed at $23, Birmingham. Charcoal iron sales total 800 tons. Prices are firm.

The pig iron market in the south is showing signs of revival though large orders have been booked. Some of the large concerns are willing to make concessions on the $27 quotations, $25 being accepted on 500 to 1,000 tons. The smaller interests which has been selling at $24 and $25 has withdrawn from the market. The buying has been in one, two and three car lots at a time, but inquiries have been quite encouraging. Foundries in the Birmingham district, looking forward to an early increase in operations are not well supplied with pig iron.

Current Hardware and Metal Prices.

AMERICAN ARTISAN AND HARDWARE RECORD is the only publication containing Western Hardware and Metal prices corrected weekly.

METALS

PIG IRON.

Chicago Foundry	27 00 to 27 50
Southern Fdy. No. 2	29 51 to 30 01
Lake Sup. Charcoal	32 04
Malleable	27 00 to 27 50

FIRST QUALITY BRIGHT TIN PLATES.

		Per Box
IC	14x20 112 sheets	$12 45
IX	14x20	14 05
IXX	14x20 56 sheets	17 57
IXXX	14x20	18 12
IXXXX	14x20	18 65
IC	20x28 112 sheets	27 50
IX	20x28	29 85
IXX	20x28 56 sheets	16 15
IXXX	20x28	17 20
IXXXX	20x28	18 25

TERNE PLATES.

		Per Box
IC	20x28, 40-lb. 112 sheets	$25 60
IX	20x28, 40-lb. " "	28 50
IC	20x28, 30-lb. " "	21 80
IX	20x28, 30-lb. " "	24 70
IC	20x28, 25-lb. " "	20 80
IX	20x28, 25-lb. " "	23 70
IC	20x28, 20-lb. " "	18 30
IV	20x28, 20-lb. " "	21 15
IC	20x28, 15-lb. " "	17 05
IC	20x28, 12-lb. " "	15 75
IC	20x28, 8-lb. " "	14 05

COKE PLATES.

Cokes, 80 lbs., base, 20x28.	$14 05
Cokes, 90 lbs., base, 20x28.	14 30
Cokes, 100 lbs., base, 20x28.	14 65
Cokes, 107 lbs., base, IC 20x28	15 10
Cokes, 135 lbs. base, IX 20x28	17 15
Cokes, 155 lbs. base, 56 sheets	9 30
Cokes, 175 lbs. base, 56 sheets	10 10
Cokes, 195 lbs. base, 56 sheets	10 95

BLUE ANNEALED SHEETS.

Base .....per 100 lbs. $4 00

ONE PASS COLD ROLLED BLACK.

No. 18-20.....per 100 lbs.	$5 00
No. 22-24.....per 100 lbs.	5 05
No. 26.....per 100 lbs.	5 10
No. 27.....per 100 lbs.	5 15
No. 28.....per 100 lbs.	5 20
No. 29.....per 100 lbs.	5 30

GALVANIZED.

No. 16.....per 100 lbs.	$5 60
No. 18-20.....per 100 lbs.	5 75
No. 22-24.....per 100 lbs.	5 90
No. 26.....per 100 lbs.	6 05
No. 27.....per 100 lbs.	6 20
No. 28.....per 100 lbs.	6 35
No. 30.....per 100 lbs.	6 85

BAR SOLDER.

Warranted.
50-50 .....per 100 lbs. $25 25

Commercial.
45-55 .....per 100 lbs. 24 50
Plumbers ....per 100 lbs. 22 25

ZINC.

In Slabs 6 75

SHEET ZINC.

Cask lots, stock, 100 lbs... 11 00
Less than cask lots, 100 lbs. 11 50

BRASS.

Sheets, Chicago base.....21¾c
Mill Base 19c
Tubing, brazed, base.....27c
Wire, base 19c

COPPER.

Sheets, Chicago base.....22¼c
Mill Base 21¾c
Tubing, seamless, base.....24c
Wire, No. 9 & 10 B. & S. Ga., ...21¼c
Wire, No. 11 B. & S. Ga....21¼c

LEAD.

American Pig..... 7 00
Bar 8 00

Sheet.
Full Coils.....per 100 lbs. 10 25
Cut coils.....per 100 lbs. 11 25

TIN.

Pig Tin .....per 100 lbs. 41 12½
Bar Tin .....per 100 lbs. 42 12½

HARDWARE, SHEET METAL SUPPLIES, WARM AIR HEATER FITTINGS AND ACCESSORIES.

ADZES.

Coopers'.
Barton's .....Net
White's .....Net

AMMUNITION.

Shells, Loaded, Peters.
Loaded with Black Powder 18%
Loaded with Smokeless Powder 18%

Winchester.
Smokeless Repeater Grade .....20 & 4%
Smokeless Leader Grade .....20 & 4%
Black Powder .....20 & 4%

U. M. C.
Nitro Club .....20 & 4%
Arrow .....20 & 4%
New Club .....20 & 4%

Gun Wads—per 1000.
Winchester 7- 8 gauge 10&7½%
" 9-10 gauge 10&7½%
" 11-28 gauge 10&7½%

ASBESTOS.

Paper up to 1/16.....6c per lb.
Rollboard .....6¼c per lb.
Millboard 3/32 to ⅛....6c per lb.
Corrugated Paper (250 sq. ft. to roll)....$6.00 per roll

AUGERS.

Boring Machine.....40&10%
Carpenter's Nut 50%

Hollow.
Stearns, No. 4, doz.....$11 50

Post Hole.
Iwan's Post Hole and Well 35%
Vaughan's, 4 to 9 in.....$15 60

AXES.

First Quality, Single Bitted (unhandled, 3 to 4 lb., per doz.....$14 00

Good Quality, Single Bitted, same weight, per doz. 12 00

BARS, CROW.

Steel, 4 ft., 10 lb.....$ 80
Steel, 5 ft., 12 lb..... 1 40

Pinch bars.
5½ ft., 24 lb..... 1 60

BARS, WRECKING.

V. & B. No. 12.....	$0 34
V. & B. No. 24.....	0 43
V. & B. No. 324.....	0 57
V. & B. No. 30.....	0 48
V. & B. No. 330.....	0 62

BITS.

All Vaughan and Bushnell.

Screw Driver, No. 30, each	$ 27
Screw Driver, No. 1, each	16
Reamer, No. 80, each...	41
Reamer, No. 100 each...	41
Countersink, No. 13, each..	20
Countersink, Nos. 14-15 each	27

BLADES, SAW.

Wood.
Atkins 30-in.

Nos.	6	40	26
	$3 90	$9 45	$5 40

BLOCKS.

Wooden 45%
Patent 45%

BLOW TORCHES (See Firepots).

BOARDS.

	Per Doz.
Stove. Crystal, 33"	23 90

Wash.

No. 760, Banner Globe (single) .....per doz.	$5 25
No. 662, Banner Globe (single) .....per doz.	6 75
No. 801, Brass King, ...per doz.	8 25
No. 860, Single—Plain Pump	6 25

BOLTS.

Carriage, Machine, etc.
Carriage, cut thread, ⅝x6 and sizes smaller and shorter 45-5%
Carriage sizes, larger and smaller and shorter....40-5%
Machine, ⅝x4 and sizes smaller and shorter.....50%
Machine, sizes larger and longer than ⅝x4.....40-10%
Stove 70-5%

BRACES, RATCHET.

V. & B. No. 444 8 in.....	$4 54
V. & B. No. 222 8 in.....	3 39
V. & B. No. 111 8 in.....	3 55
V. & B. No. 11 8 in.....	3 02

BRUSHES.

Hot Air Pipe Cleaning.
Bristle, with handle, each $0 85

Flue Cleaning.
Steel Only, each.....$1 25

BURRS.

Copper Burrs only.....40%

BUTTS.

Steel, antique copper or dull brass finish—case lots—3½x3½—per dozen pairs $3 48
4x4 ..... " " " 4 74

Heavy Bevel steel inside sets, case lots—.....per dozen sets 8 00

Steel bit keyed front door sets, each 2 00

Wrought brass bit keyed front door sets, each.... 4 00

Cylinder front door sets, each 8 50

CEMENT, FURNACE.

American Seal, 5 lb. cans, net	$ 45
" " 10 lb. cans, "	90
" " 25 lb. cans, "	2 00
Asbestos, 5 lb. cans "	45
Pecora.....per 100 lbs.	7 51

CHAINS.

Sher. Steel Safety Chain.

500-ft. coil, per ft.....	.02
100 to 500 ft., per ft....	.02½
Less than 100 ft., per ft	.03

Iron Jack Chain.
Box (12 yds.)..... .45

CHIMNEY TOPS.

Iwan's Complete Rev. & Vent. 20%
Iwan's Iron Mountain only..35%
Standard .....30 to 40%

CHISELS.

Cold.

V. & B. No. 25, ¼ in., each	$0 26
V. & B. No. 25, ⅜ in., each	41

Diamond Point.

V. & B. No. 55, ¼ in.....	0 31
V. & B. No. 55, ½ in.....	0 48

Firmer Bevelled Round Nose.

V. & B. No. 65, ¼ in.....	0 29
V. & B. No. 65, ½ in.....	0 40

Socket Firmer. Cape.

V. & B. No. 50, ⅜ in.....	0 31
V. & B. No. 50, ½ in.....	0 57

CHUCKS, DRILL.

Goodell's, for Goodell's Screw Drivers .....List less 35-40%
Yankee, for Yankee Screw Drivers $6 00

CLAMPS.

Adjustable.
No. 100, Door (Stearns) doz. $22 00

Carpenters'.
Steel Bar..List price plus 20%

Hose.
Sherman's brass, ¾-inch per doz. $0 48
Double, brass, ¾-inch, per doz. 1 20

CLINKER TONGS

Front Rank, each.....$1 75
Per doz. 1 85

CLIPS.

Damper.
Acme, with tail pieces, per doz. $1 35
Non Rivet tail pieces, per doz. 35

COPPERS—Soldering. Pointed Roofing.

3	lb. and heavier....per lb.	40c
2½	lb..... "	46c
2	lb..... "	42c
1½	lb..... "	55c
1	lb..... "	60c

CORD.

No. 7 Std. per doz. banks..$10 35
No. 8 " " " " 12 00

CORNICE BRAKES.

Chicago Steel Bending.
Nos. 1 to 6 B.....10%

COUPLINGS, HOSE.

Brass.....per doz. $2 25

CUT-OFFS

Kuehn's Korrekt Kutoffs:
Galv., plain, round or cor. rd. Standard gauge 40%
26 gauge 10%

DAMPERS.

"Yankee" Hot Air.

7	inch, each	20c, doz.....	$1 75
8	" "	25c, "	2 40
9	" "	30c, "	2 75
10	" "	32c, "	3 00

Smoke Pipe.

7	inch, each.....	$ 35
8	" "	40
9	" "	50
10	" "	60
12	" "	90

Reversible Check.

8	inch, each.....	$1 50
9	" "	1 70

DIGGERS.

Post Hole.
Iwan's Split Handle (Eureka)
4-ft. Handle...per doz. $14 00
7-ft. Handle...per doz. 36 00

Iwan's Hercules pattern, per doz. 14 00

DRILLS.

V. & B. Star, 12-inch Length.

¼, 5/16 and ⅜, each....	$	35
⅜, each		38
1, each		54
1¼, each		81

V. & B. Star, 18-inch Length.

5/16 and ⅜, each.....	$	33
⅜, each		45
1, each		69
1¼, each		1 05

EAVES TROUGH.

Milcor .....
Galv. Crimpedge, crated...70-5%

ELBOWS—Conductor Pipe.

Milcor .....
Galv., plain or corrugated, round flat.
Crimp, Std. gauge.....60%
26 Gauge Std. gauge.....40%
24 Gauge Std. gauge.....10%

Square Corrugated.
Milcor .....
Standard gauge 45%
26 gauge 30%

Portico Elbows.
Standard Gauge Conductor Pipe, plain or corrugated.
Not nested .....70 & 5%
Nested solid .....70 & 5%

ELBOWS—Stove Pipe.

1-piece Corrugated. Uniform.

	Doz.
5-inch	$1 45
6-inch	1 60
7-inch	2 10

Special Corrugated.

	Doz.
6-inch	$1 45
7-inch	1 75

Uniform, Collar Adjustable.

	Doz.
5-inch	$2 00
6-inch	2 10
7-inch	2 60

WOOD FACES—50% off list.

FENCE.

Field Fence	60½
Lawn "	53%

FILES AND RASPS.

Heller's (American)	65-5%
American	65-5%
Arcade	60 & 10%
Black Diamond	50-5%
Eagle	60-10%
Great Western	60 & 10%
Kearney & Foot	60 & 10%
McClellan	60 & 10%
Nicholson	50-14%
Simonds	60%

FIRE POTS.

Ashton Mfg. Co.

Complete line Firepots and Torches...52%

Otto Bernz Co.

No. 1 Furn. Gasolene with large shield, 1 gal.	$ 6 75
No. B Furn. Kerosene, 1 gal.	15 12
No. 10 Brazier, Kerosene or Gasolene, 10 gals.	47 52
No. 5 Torch, Gasolene or Kerosene, 1 pt.	7 92
No. 33 Torch, Gasolene, 1 quart	5 40
No. 36 Torch, Gasolene, 1 pt.	4 05

Clayton & Lambert's.

East of west boundary line of Province of Manitoba, Canada, No. Dakota, So. Dakota, Nebraska, Kansas, Oklahoma, Amarillo, San Angelo and Laredo, Texas 52%
West of above boundary line.48%

Geo. W. Diener Mfg. Co.	Ea.
No. 02 Gasolene Torch, 1 qt.	$ 5 55
No. 0250, Kerosene or Gasolene Torch, 1 qt.	7 50
No. 10 Tinners' Furn. Square tank, 1 gal.	12 60
No. 15 Tinners' Furn. Round tank, 1 gal.	12 00
No. 21 Gas Soldering Furnace	3 60
No. 110 Automatic Gas Soldering Furnace	10 50

Double Blast Mfg. Co.

Gasolene, Nos. 25 and 35...60%

Quick Meal Stove Co.

Vesuvius, F.O.B. St. Louis 30% (Extra Disct. for large quantities)

Chas. A. Hones, Inc.	
Buzzer No. 1	$ 9 00
" " 2	12 00
" " 22	13 50
" " 42	15 00
" " 43	19 00

FREEZERS—ICE CREAM.

Peerless and Alaska	
1 quart	$2 95
2 quart	3 45
3 quart	4 10
White Mountain	
½ quart	$3 50
1 quart	4 90
2 quart	5 70

GALVANIZED WARE.

Pails (Competition), 8-qt.	$1 95
10-qt.	2 25
12-qt.	2 50
14-qt.	2 75
Wash tubs, No. 1	$6 75
No. 2	7 00
No. 3	8 25

GARAGE DOOR HARDWARE.

Stanley .....All net

GAUGES.

Marking, Mortise, etc.....Nets

Wire.

Disston's 25%

GIMLETS.

Discount .....65% and 10%

GLASS.

Single Strength, A and B. all sizes .....83 & 85%
Double Strength, A, all sizes 84%

GREASE, AXLE.

Frazers'	
1-lb. tins, 36 to case, per case	$ 4 70
3-lb. tins, 24 to case, per case	7 80
5-lb. tins, 12 to case, per case	7 20
10-lb. tins, per dozen	10 40
15-lb. tins, per dozen	12 80
25-lb. tins, per dozen	19 80

HAMMERS, HANDLED.

All V. and B.	Each, net
Blacksmiths' Hand, No. 0, 26-oz.	$1 00
Engineers' No. 1, 26-oz.	1 60
Farrier's, No. 7, 7-oz.	93
Machinists', No. 1, 7-oz.	78
Nail.	
Vanadium, No. 41, 20-oz. each	1 45
Vanadium, No. 41½, 16-oz., each	1 45
V. & B., No. 11½, 16-oz. each	1 04
Garden City, No. 111½, 16-oz., each	87
Tinner's Riveting, No. 1, 8-oz., each	82
Shoe, Steel, No. 1, 18-oz., each	65
Tack.	
Magnetic. No. 5, 4-oz., each	72

HAMMERS, HEAVY.

Farrier's 20%
Mason's.
Single and Double Face....50%

HANDLES.

Axe.	
Hickory, No. 1....per doz.	4 00
Hickory, No. 2.... "	3 00
1st quality, second growth	6 00
Special white, 2nd growth	5 00
Chisel.	
Hickory, Tanged, Firmer Assorted .....per doz.	55c
Hickory, Socket, Firmer, Assorted .....per doz.	70c
File.....per doz.	$1 20
Hammer and Hatchet.	
No. 1 per doz.	$0 90
Second growth hickory, per doz.	1 50
Soldering.	
Per doz.	$2 40

HANGERS.

Conductor Pipe.	
Milcor Perfection Wire	25%
Eaves Trough.	
Steel hangers	30%
Triple Twist wire	10%
Milcor Eclipse Wire	20%
Milcor Triplex Wire	15%
Milcor Milwaukee Extension	15%
Milcor Steel (galv. after forming) List plus	12½%
Milcor Selflock E. T. Wire, List plus	40%

HASPS.

Hinge, Wrought, with staples, Net

HATCHETS.

V. and B. Supersteel.	Each
Broad, No. 1, 24-oz.	$1 43
Half, No. 1, 15-oz.	1 25
Half, No. 3, 27-oz.	1 37
Claw, No. 1, 19-oz.	1 31
Flooring, No. 1, 20-oz.	1 43
Shingling, No. 1, 17-oz.	1 20
Lathing, No. 1, 14-oz.	1 20
Lathing, No. 2, 17-oz.	1 25
Vanadium Steel.	
Half, No. 62, 22-oz.	$1 82
Underhill Pattern Lathing, 9 row, 19-oz.	2 29

HINGES.

Heavy Strap, in Bundles.	
4 inch, dozen prs.	$1 12
5 " " "	1 57
6 " " "	1 93
8 " " "	3 21
Extra Heavy T in Bundles.	
4 inch, dozen prs.	$1 74
5 " " "	1 85
6 " " "	2 31
8 " " "	3 97

HOES.

Garden .....Net

HOOKS.

Box.	
V. and B. No. 9, each	$0 26
Conductor.	
Milcor	
"Direct Drive" Wrought Iron for wood or brick	15%
Cotton.	
V. and B. No. 8, each	24
Hay.	
V. and B. No. 1, each	26
Bar Meat.	
V. and B. No. 26, ¾", each	09
V. and B. No. 28, ½", each	16
Screw Meat.	
V. and B. No. 2, per gro.	6 50
Butchers' "S."	
V. and B. No. 6, each	08
V. and B. No. 8, each	11

HOSE.

	Per. Ft.
¾-in. 2 ply molded	9½c to 13¾c
¾-in. cord	8½c to 10c
¾-in. wrapped	13½c

HUMIDIFIERS.

"Front-Rank," Automatic.
In single lots.....50%
In lots of 10 or more....50-5%
In lots of 25 or more..50-10%
Vapor pans, etc., each.....50%

IRONS.

Sad.	
Genuine Mrs. Potts, nickel plated, per set	$1 55
Asbestos No. 70, per set.	2 10
Asbestos No. 100, per set.	2 30
E. C. Stearns'.	
No. OA Corner, doz. sets	$2 50
No. OB " " "	2 75

KNIVES.

Butcher.	
Beechwood Handles, 6-inch blade	25%
Beechwood Handles, 7-inch blade	25%
Beechwood Handles, 8-inch blade	25%
Cooper's Hoop.	25%
Drawing.	
Standard	25%
Adjustable	25%
Barton's Carpenters'	25%
Hay.	
Iwan's Solid Socket	25%
Heath's	25%
Iwan's Sickle Edge	25%
Iwan's Imp'd Serrated	25%
Hedge.	
Challenge	25%
Disston's No. 1	25%
Putty.	
Common	25%
Lander's	25%
Scraping.	
Beech Handles	25%
Lander's	25%

KNOBS.

Door.	
Mineral .....per doz.	$2 00
Porcelain ..... "	2 00
Jet ..... "	2 00

LADDERS.

Step.	
Common, per ft.	28c
Common, with Shelf, add 10c	
IXL	34c
Challenge, 6 to 9 ft.	55c
10 to 16 ft.	60c
Kant-Break, per lineal ft.	75c

LANTERNS.

	Per doz.
Monarch tin, hot blast	$ 8 25
Dietz No. 2, cold blast	13 00
Best tubular	8 25
Competition lanterns No. 0 tubular	6 90

LAWN MOWERS.

12-inch	$5 20
16-inch	5 85
Ball Bearing.	
4 blade, adjustable bearing. 14"	$7 50
16"	7 80

LEATHER BELTING.

From No. 1 Oak Tanned Butts. Extra heavy, 18-oz.	35%
Heavy, 16-oz.	40%
Medium, 14½-oz.	40%
Light, 13-oz.	50%

LEATHER LACING.

Cut, strictly No. 1.....45%

LEVELS.

Disston, No. 28 Asst.	$22 05
" No. 18, 20 in., each	1 82
" No. 22, 24 in., each	2 40
" Shafting, 6 in.	19 80
" " 5 in. gr. glass	24 20
" No. 1 Asst.	5 75
" No. 2 Asst.	12 40
" 24-26 in., each	1 92
" 28-30 in., each	1 00

LIFTERS.

Stove Cover.	
Coppered .....per gro.	$6 00
Alaska ..... "	4 75

LOCKS.

Barn Door.	
No. 60 Stearn's..per doz.	$11 00
No. 80 " "	20 00

MALLETS.

Carpenters'.	
Fibre Head No. 2, per doz.	$12 00
" No. 3, "	15 50
" No. 3½, "	20 50
Round Hickory .....per doz.	$3 00— 5 00
Tinners'.	
Hickory .....per doz.	$2 25

MATS.

Door.	
National Rigid	5 & 10 & 5%
Acme Steel Flexible	50%

MITRES.

Galvanized steel mitres, and caps, end pieces, outlets	30%
Milcor	
Galv. one piece stamped	40%

MOPS.

Cotton, Star (Cut Ends).				
Pounds	12'	15'	18'	24'-3-oz.
Per doz.	$4 00	4 35	5 50	7 00
Enterprise				16⅔%
Parker				50 & 5%

NAILS.

Cut Steel	$4 70
Cut Iron	4 70
Wire.	
Common	3 80
Cement Coated	3 40

NETTING, POULTRY.

Galvanized before weaving	45-10%
Galvanized after weaving	45%

NIPPERS.

Nail Cutting.	
V. & B. No. 30	78c
Double Duty.	
V. & B. No. 60	76c
Hoof.	
Heller's	40 & 10%
V. & B. No. 52, each	$2 25

NOZZLES.

Hose.	
Magic .....per doz.	$9 60
Diamond ..... "	5 75

OILERS.

Chase Pattern.	
Brass and Copper	10%
Zinc Plated	40 & 5%
Railroad.	
Brass	20 & 5%
Coppered	50 & 5%
Steel.	
Copper Plated	70 & 5%

OPENERS.

Delmonico .....per doz.	$1 20
Never Slip..... "	65
Crate.	
V. & B...per doz.	$7 25—11 00

PAILS.

Cream.
14-qt. without gauge, ...per doz. $9 50
12-qt. without gauge, ...per doz. 11 00
20-qt. without gauge, ...per doz. 11 75

Sap.
10-qt., IC Tin....per doz. $4 00
12- " " " " 5 50

Stock.

Galv. qts.	14	16	12	20
Per doz.	$9 75	10 75	12 75	14 50

Water.

Galvanized qts.	10	12	14
Per doz.	$5 75	6 50	7 25

PASTE

Asbestos Dry Paste:
200-lb. barrel $15 00
100-lb. barrel 8 00
35-lb. pail 3 25
10-lb. bag 1 00
5-lb. bag 55
2½-lb. cartons 30

PINCERS.

All V. & B.

Carpenters', cast steel, No.	6	8	10	12
Each	$0 43	$0 52	$0 61	$0 71

Blacksmiths', No. 10.....$0 64

PIPE.

Conductor.
"Interlock" Galvanized.
Crated and nested (all gauges) 60-7½%
Crated and not nested (all gauges) 60-2½%
Square Corrugated A and B and Octagon.
29 Gauge 60-10%
28 " 60-10%
26 " 60-10%
24 " 60-10%

"Interlock."
Crated and nested (all gauges) 60-7½%
Prices for Galvanized Toncan Metal, Genuine O. H. Iron, Lyonmore Metal and Keystone C. B. on application.

Stove. Per 100 joints.
26 gauge, 5 inch E. C. nested $16 00
26 gauge, 6 inch E. C. nested 17 00
26 gauge, 7 inch E. C. nested 19 00
28 gauge, 5 inch E. C. nested 14 00
28 gauge, 6 inch E. C. nested 15 00
28 gauge, 7 inch E. C. nested 17 00
30 gauge, 5 inch E. C. nested 13 00
30 gauge, 6 inch E. C. nested 14 00
30 gauge, 7 inch E. C. nested 16 00
T-Joint Made up, 6-inch..... per 100 $40 00

Furnace Pipe.
Double Wall Pipe and Fittings 33⅓%
Single Wall Pipe, Round Pipe Fittings 33⅓%
Galvanized and Back Iron Pipe, Shoes, etc...33⅓%
Milcor Galvanized 40%

PLANES.

Stanley Iron Bench.....Net

PLIERS.

(V. & B.)
Nut, No. 2, each.....$2 60
" No. 5, each..... 64
" No. 25, each..... 69
Gas, No. 7, each..... 55
" No. 8, each..... 61
" No. 12, each..... 87
Lining or Crimping.
No. 35, each..... 64
Button's Pattern.
No. 6 each..... 61
No. 8 each..... 74
Double Duty, No. 106..... 50

POINTS, GLAZIERS'.

No. 1, 2 and 3..per doz. pkgs. 65c

POKERS, STOVE.

Wr't Steel, str't or bent, ... per doz. $0 75
Nickel Plated, coil handles ..... " 1 10

POKERS, FURNACE.

Each $0 50

PULLEYS.

Furnace Tackle.....per doz. $0 60
Per gross 6 00
" Screw (encased) ...per doz. $0 85
Ventilating Register.
Per gross $9 00
Small, per pair..... 0 30
Large, per pair..... 0 50

PUNCHES.

Machine.	Each.
V. & B., No. 11-13, 1½x6..$0 19	
V. & B., No. 90, ⅝x9.....	27
V. & B., No. 10, ⅝x10....	29
V. & B., No. 1-6, ½x6....	12

Center.
V. & B., No. 50, ⅝x4.....$0 14
Belt.
V. & B., No. 101-103.....$0 24
V. & B., No. 102-109..... 33
V. & B., No. 25, ass't..... 3 30

Samson Line.
No. 1 Hand { Doz. lots or less 40%
No. 2 Hand { 3 doz. lots ...Less 40 & 5%
No. 4 Hand { 6 doz. lots or more...Less 50%
No. 3 Bench { Less than doz. lots...Less 25%; Doz. lots or more...Less 40%

Extra Punches and Dies for Samson:
No. 1 Hand { Less than doz. lots....Less 25%
No. 2 Hand { Doz. lots, ...Less 33⅓%
No. 4 Hand { 3 doz. lots, ...Less 40%
No. 3 Bench { 6 doz. lots or more, ..Less 40 & 10%

PUTTY.

Commercial Putty, 100-lb. kits $3 55

QUADRANTS.

Malleable Iron Damper.....10%

RAZORS—SAFETY.

Gillette .....per doz.		$45 00
Auto Strop	"	45 00
Gem	"	3 40
Gem (3 doz. lots)..	"	3 00
Every Ready	"	3 40
Ever Ready (3 dz. lots)	"	3 00

RAZORS STRAIGHT.

RAZOR STROPS.

Star (Honing) 50%

FLOOR REGISTERS AND BORDERS.

Cast Iron 20%
Steel and Semi-Steel.....33⅓%
Baseboard 33⅓%
Adjustable Ceiling Ventilators 33⅓%

Register Faces—Cast and Steel
Japanned, Bronzed and Plated. 4x6 to 14x14.....33⅓%
Large Register Faces—Cast, 14x14 to 38x42.....60%
Large Register Faces—Steel, 14x14 to 38x42.....65%

ROOFING.

	Per Square
Best grade, slate surf. prep'd	$1 85
Best talc surfaced.....	2 20
Medium talc surfaced.....	1 50
Light talc surfaced.....	95
Red Rosin Sheeting, per ton	$72 00

ROPE.

Cotton.
Sisal.
1st Quality, base 14½c to 16½c
No. 2 .....13½c to 15c
Manila.
1st Quality standard brands .....18½c to 20½c
No. 2 .....17c to 18½
Hardware Grade, per lb. 17½c

SAWS.

Butchers'.		
Atkins	No. 2, 14-in.....	$12 75
"	No. 2, 18-in.....	14 30
"	No. 7, 16-in.....	15 85
"	No. 2, 22-in.....	15 92
"	No. 7, 20-in.....	18 05
"	No. 7, 24-in.....	20 20
"	No. 7, 28-in.....	22 35
Compass.		
Atkins	No. 2, 10-in.....$	5 45
"	No. 10, 10-in.....	5 60
"	Blades, No. 2, 10-in.	3 25
"	" No. 2, 10-in.	3 30
Cross-Cut.		
Atkins	No. 221, 4 ft.....	$3 03
"	No. 221, 6-ft.....	4 45
"	No. 221, 8-ft.....	6 07
Hand.		
Copper Burrs only.....		30%
"	No. 96, 26-in.....	21 70
Hand and Rip.		
Atkins	No. 54, 20-in.....$	19 50
"	No. 54, 26-in.....	24 40
"	No. 53, 16-in.....	18 10
"	No. 53, 20-in.....	22 90
"	No. 53, 24-in.....	26 60
"	No. 53, 28-in.....	31 45
"	No. 53, 30-in.....	34 15
Keyhole.		
Atkins	No. 1, complete..	$3 10
"	No. 2, complete..	3 70
Miter Box.		
Atkins	No. 1, 4x20.....$	32 65
"	No. 1, 5x22.....	33 00
"	No. 1, 6x22.....	42 20
Pruning.		
Atkins	No. 20, 12-in.... $	8 45
"	No. 10, 16-in....	18 15
Wood.		
Atkins	No. 202.....$	7 19
"	No. 313.....	8 75
"	No. 906.....	15 50
"	No. 1509.....	16 56

SCRAPERS.

Box.
No. 6, six blades each.... 25c
Hog.
No. 6, each..... 25c
Floor (Stearns).
No. 10, each.....$11 50

SCREEN DOOR HINGES.

Cast Iron .....gross		$13 00
Steel	"	9 50

SCREWS.

Wood.
F. H. Bright 80%
R. H. Blued 78%
F. H. Jap'd 74%
F. H. Brass 76%
R. H. Brass 74%
Sheet Metal.
No. 7, ½x ⅛, per gross.$0 55
No. 10, ¾x3/16, per gross. 75
No. 14, ⅞x ¼, per gross. 90

SCREW DRIVERS.

Uncle Sam Standard Head.
3 inches, each.....$ 45
5 inches, each..... 53
8 inches, each..... 68
12 inches, each..... 1 02
Uncle Sam Insulated Head.
3 inches, each.....$ 49
5 inches, each..... 57
8 inches, each..... 76
12 inches, each..... 1 14

SETS.

Nail.
V. & B.
No. 100, in cardboard boxes .....doz. $1 55
No. 100, in wooden boxes, ... doz. 1 55
No. 30, assorted.....doz. 39
No. 5, in cardboard boxes, ... doz. 1 25
No. 5, in wooden boxes, ... doz. 1 30
Rivet.
V. & B.
Farmers' $0 19
Tinners' 3-4 ..... 0 40
" 00-0..... 0 60
Saw.
Atkins No. 10....per doz. $3 30
" No. 12.... " 6 20

SHEARS.

	Per Doz.
Nickel Plated, Straight, 6"	$12 90
" " " 7"	14 85
" " " 8"	16 80
Japanned, Straight ....6"	11 00
" " ....7"	12 40
" " ....8"	13 80

SHEARS, TINNERS' & MACHINISTS'.

Viking $22 00
Lennox Throatless.
No. 18 .....35%
Shear blades.....10%
(f.o.b. Marshalltown, Iowa.)
Peerless Steel Squaring.
Foot Power.
No. 1—30", 18 ga. cap.....15%
No. 2—36", 18 ga. cap.....15%
No. 4—52", 18 ga. cap.....15%
No. 10—120", 22 ga. cap...15%
No. 4A—52" 16 ga. cap....15%
Cast Iron Foot Power.
No. 01, 30", 18 ga. cap....15%
Power Driven.
(No. 100 Series, 2 Shaft Drive.)
No. 142—42", 18 ga. cap....15%
(No. 200 Series, 2 Shaft Underneath Drive.)
No. 242—42", 14 ga. cap...15%
(No. 300 Series, 3 Shaft Underneath Drive.)
No. 342—42", 10 ga. cap....15%
No. 372—72", 10 ga. cap....15%
(No. 500 Series, 3 Shaft Underneath Drive.
No. 596—96", 10 ga. cap...15%
(No. 600 Series, 3 Shaft Underneath Drive.)
No. 6120—120", 3/16" cap..15%

SHINGLES.

	Per Square
Zinc (Illinois)	$18 00

SHOES.

Milcor.
Galv. Std. Gauge, Plain or corg. round flat crimp...60%
26 gauge round flat crimp..40%
24 gauge round flat crimp..10%
Conductor 60%

SHOVELS AND SPADES.

Coal.
Hubbard's.

No.	A	B	C	D
1	$16 00	15 10	14 45	13 70
2	16 35	15 60	14 85	14 10
3	16 75	16 00	16 25	14 45
4	17 10	16 35	16 60	14 85

Post Drains & Ditching.
Hubbard's.

Size	A	B	C
14"	$17 15	$16 40	$15 65
16"	17 50	16 75	16 00
18"	17 85	17 10	16 35
20"	18 20	17 45	16 70
22"	18 55	17 80	17 05

Alaska Steel.
D-Handle .....per doz. $3 50
Long Handle ..... " 3 00

SIFTERS.

Genuine Hunters, doz.....$2 50

SKATES.

Ice, Men's and Boys'.

	Per Pair
Key Clamp—rocker—bright finish .....$	76
Key Clamp—rocker—nickel finish	1 10
Key Clamp—rocker — pol. steel	1 26
Key Clamp—Hockey	1 38
Skate outfits	4 75

Women's and Girls'.
½ Key Clamp—rocker....$1 21
" " " hockey .. 1 38
Ice Skate outfit 5 00
Roller.
Ball Bearing—Boys' $1 55
Ball Bearing—Girls' 1 65

SNIPS, TINNERS'.

Clover Leaf .....40 & 10%
National .....40 & 10%
Star 50%
Milcor .....Net

SQUARES.

Steel and Iron.....Net
(Add for bluing, $3.00 per doz. net)
Mitre ..... "
Try ..... "
Try and Bevel..... "
Try and Mitre..... "
Fox's .....per doz. $6 00
Winterbottom's 10%

STAPLES.

Blind.
Barbed .....per lb. 21@22c
Butter, Tub..... " 16@19c
Fence—
Polished .....per 100 lbs. $5 45
Galvanized ... " 6 15
Netting.
Galvanized ...per 100 lbs. $6 54
Wrought.
Wrought Staples, Hasps and Staples, Hasps, Hooks and Staples, and Hooks and Staples .....50 & 10%
Extra heavy 35%

STONES.

Axe.

	per lb.	New Nets
Hindostan		
More Grite	"	"
Washita	"	"

Emery.
No. 126.....per doz. New Nets
Oil—Mounted.

Arkansas Hard No. 7.....per doz.	New	Nets
Arkansas Soft.	"	"
Washita No. 717	"	"

Oil—Unmounted.

Arkansas Hard	per lb.	New Nets
Arkansas Soft.	"	"
Lily White....	"	"
Queer Creek...	"	"
Washita	"	"

Scythe.

Black Diamond	per gro.	New Nets
Crescent	"	"
Green Mountain	"	"
LaMolle	"	"
Extra Quinnebog	"	"
Red End	"	"

STOPS, BENCH.

No. 10 Morrill pattern .....per doz. $11 00
No. 11 Stearns pattern ..... " 10 00
No. 15 Smith pattern ..... " 7 00

STOPPERS, FLUE.

Common .....per doz. $1 10
Gem, No. 1..... " 1 10
Gem, flat, No. 3... " 1 00

STRETCHERS.

Carpet.
Bullard's .....per doz. $3 90
Excelsior ..... " 5 25
Malleable Iron.... " 70
Perfection ..... " 6 30
King ..... " 4 50
Wire.
O. S. Elwood, No. 1 per doz. Nets
O. S. Elwood, No. 2, " "

SWIVELS.

Malleable Iron.....per lb. $0 10
Wrought Steel.....per gro. 4 50

TACKS.

Bill Posters' 6-oz. 25-lb. boxes per lb. 15c
Upholsterers' 6-oz., 25-lb. boxes, per lb.....15½c

TAPES, MEASURING.

Asses' Skin .....List & 40%

THERMOMETERS

Tin Case...per doz. 80c & $ 1 25
Wood Backs " $2 00 & 12 00
Glass ..... " 12 00

TIES.

Bale.
Single Loop, carload lots .....75 & 7%
Single Loop, less than car lots .....70 & 15%

TRAPS.

Mouse and Rat.	Per Gross.
Sure Catch Mouse Traps.	$ 2 10
Vim Mouse Traps.....	2 10
Short Stop Mouse Traps.	1 80
Wood Choker Mouse Traps, 4 hole.....	10 25

	Per Doz.
Sure Catch Rat Traps....	$0 90
Dead Easy Rat Traps....	1 00

Baskets.

Packed in One Bushel Band Stave	List per Bushel.
Sure Catch Mouse Traps (360 Traps)	$ 5 25
Short Stop Mouse Traps (360 Traps.).....	4 50
Sure Catch Rat Traps (64 Traps)	3 60
Short Stop Rat Traps (64 Traps)	3 15

Assorted Mouse and Rat Traps.

	List per Bushel.
Sure Catch (216 Mouse Traps and 26 Rat Traps)	$4 90
Short Stop (216 Mouse Traps and 26 Rat Traps)	4 25

TROWELS.

Cement.
Atkins No. 6.....$19 50
" No. 9..... 25 50

TWINE.

White Cotton.
Eureka, 4-ply.....per lb. 30c
Jute.
3-ply and 6-ply Bale Lots 22½c

VALLEY.

Milcor .....
Galv. formed or roll.....50-7½%

VENTILATORS.

Standard.....30 to 40%

VISES.

No. 700 Hand, Inches	4½	5	5½
Doz.	$11 15	13 00	14 85
No. 701. Inches	4	5	6
Doz.	$11 15	13 00	16 70

No. 1, Genuine Wentworth, Noiseless Saw...per doz. 9 25
No. 3, Genuine Wentworth, Noiseless Saw....per doz. 12 75
No. 500, All Steel Folding Saw .....per doz. 16 00

WASHERS.

Over ⅛ in. barrel lots per 100 lbs.....$6 25

Iron and Steel.

In.	5/16	⅜	½	⅝	¾
	10¼c	9¼c	7¾c	7½c	7 2/3c

WEATHER STRIPS.

Metallic Stitched.
⅛ in., per 100 ft.....$1 80
¾ in., per 100 ft..... 2 20
Wood and Felt.
⅝ in., per 100 ft.....$1 56
¾ in., per 100 ft..... 1 56

WEIGHTS.

Hitching .....per lb. Nets
Sash—f. o. b. Chicago
Smaller lots, per ton....$47 50

WHEEL BARROWS.

Common Wood Tray.....$3 75
Steel Tray, Competition.... 4 50
Steel leg, garden..... 6 00

WIRE.

Plain annealed wire, No. 8 per 100 lbs. $3 70
Galvanized barb wire, per 100 lbs. 4 10
Wire cloth—black painted, 12-mesh, per 100 sq. ft... 2 35
Cattle Wire—galvanized catch weight spool, per 100 lbs. 4 60
Galvanized Hog Wire, 80 rod spool, per spool..... 3 93
Galvanized plain wire, No. 9, per 100 lbs..... 4 15
Stove Pipe, per stone..... 1 10

WOOD FACES.

50% off list.

WRENCHES.

Coes Steel Handle,	6-in..	40-10%
" " "	8-in..	40-10%
" " "	10-in..	40-10%
" " "	12-in..	40-10%
Coes Knife-Handle,	6-in..	40-10%
" " "	8-in..	40-10%
" " "	10-in..	40-10%
" " "	12-in..	40-10%

Coes All Patterns.....40-10%

WRINGERS.

No. 790, Guarantee	per doz.	$49 50
No. 770, Bicycle ...	"	47 00
No. 670, Domestic..	"	43 50
No. 110, Brighton...	"	39 00
No. 750, Guarantee..	"	51 00
No. 740, Bicycle....	"	48 50
No. 22, Pioneer....	"	35 50
No. 2, Superb.....	"	25 50

ADVERTISERS' INDEX

The dash (—) indicates that the advertisement does not appear in this issue.